The New England
Journal of Medicine

VOLUME 201 JULY 18, 1929 NUMBER 3

The Massachusetts Medical Society

PROCEEDINGS OF THE SOCIETY

First Day, Monday, June 10, 1929

MONDAY morning was devoted to clinics at the various Boston hospitals according to the complete program which was published in the NEW ENGLAND JOURNAL OF MEDICINE in the issue of May 30. Luncheon was served to the visiting Fellows at several of the larger hospitals.

A commercial exhibit of 25 exhibitors in the Foyer of the Copley-Plaza hotel proved of interest to the meeting. In the afternoon, the Sections of Obstetrics and Gynecology, and of Tuberculosis held their sessions in the hotel. In the evening there was an informal dinner in the Ballroom followed by a vaudeville entertainment which was presided over by the President and thoroughly enjoyed by all those present, Fellows and their families.

Second Day, Tuesday, June 11, 1929

The remaining four Sections held their meetings, morning and afternoon, in the Copley-Plaza hotel. At eleven-thirty o'clock the Supervising Censors held their annual meeting at which 16 of the 18 Districts were represented. A Committee was appointed to prepare papers for uniform use at the Censor's examinations during the ensuing year.

At 12:15 the Council met in the Ballroom, the attendance being 137. (See Proceedings of the Council.) A buffet luncheon was served from 2 to 3 o'clock and the Council adjourned at 4:20 p. m.

The annual dinner was served to 320 Fellows and guests at 6:30 p. m. Following the dinner, Dr. William H. Robey, Clinical Professor of Medicine, Harvard University, delivered the Shattuck Lecture, with the title "Public Instruction in Medicine." Dr. George H. Bigelow, Massachusetts Commissioner of Public Health, entertained and instructed the Fellows with an address entitled "General Practice and the Public Health."

Third Day, Wednesday, June 12, 1929

The Annual Meeting of the Massachusetts Medical Society was called to order in the Ballroom, by the President, at 10 a. m. The minutes of the last meeting were read by the Secretary and accepted. The Secretary read the following statistics as to membership and they were approved:

Membership of the Society June 6, 1928		4467
Lost:		
By death	80	
By resignation	23	
By deprivation	8	
Clauses (a) and (b)		
Total net loss	111	
Gained:		
New Fellows	173	
Readmitted by Censors	2	
Restored by Council	11	
Total gain	186	
Deduct net loss	111	
Total gain	75	75
Membership, June 12, 1929		4542

The Secretary read in abstract the minutes of the Board of Trial convened January 31, 1929, to try Richard Henry Houghton, of East Boston on charges of conduct unworthy of an honorable physician. On motion by Dr. Henry Jackson, duly seconded, it was *Voted unanimously*, that the sentence of the Board of Trial, namely, that said Houghton be and is expelled from his fellowship in the Massachusetts Medical Society, be accepted. There were between 70 and 80 persons in the audience at this time.

The Secretary read the following letter from the administrative secretary of the First International Congress on Mental Hygiene:

New York City,
May 15, 1929.

Dr. W. L. Burrage, Secretary
The Massachusetts Medical Society
182 Walnut Street
Brookline—Massachusetts.

Dear Dr. Burrage:

THE FIRST INTERNATIONAL CONGRESS ON MENTAL HYGIENE, sponsored by mental hygiene and related organizations throughout the world, is to be held May 5-10, 1930, at Washington, D. C. As this Congress is the first world gathering of leaders and workers in so diversified and significant a movement as the modern mental hygiene movement, its organizers regard it as of unusual significance. They invite the attendance and participation of all who are interested in any phase of mental hygiene.

The American Psychiatric Association and the American Association for the Study of the Feeble-

minded are planning to hold their annual meetings in conjunction with the International Congress.

Sincerely yours,

(Signed)—JOHN R. SHILLADY,
Administrative Secretary.

The President reported that the delegates from the other New England State Medical Societies had made known their presence during the first two days of the meeting.

Dr. Theodore J. Eastman, in the absence of the Orator, Dr. George Cheever Shattuck, Assistant Professor of Tropical Medicine, Harvard University, read his oration, with the subject: "The Interdependence of Tropical Medicine and General Medicine." Following the Annual Discourse, Dr. George R. Minot, Professor of Medicine, Harvard University, read a paper on "The Treatment of Anemia", illustrated by lantern slides.

The total registered attendance at the three day meeting was 751.

The attendance at the six Section meetings and the officers elected by the Sections for the year 1929-1930 were as follows:

SECTION OF MEDICINE: Attendance 150. Officers:
Chairman, Francis W. Palfrey, Boston.
Secretary, Albert A. Hornor, Boston.

SECTION OF SURGERY: Attendance 150. Officers:
Chairman, Irving J. Walker, Boston.
Secretary, Leland S. McKittrick, Boston.

SECTION OF TUBERCULOSIS: Attendance 68. Officers:
Chairman, Walter A. Griffin, Sharon.
Secretary, Sumner H. Remick, Reading.

SECTION OF PEDIATRICS: Attendance 120. Officers:
Chairman, Orville R. Chadwell, Jamaica Plain.
Secretary, Joseph Garland, Boston.

SECTION OF OBSTETRICS AND GYNECOLOGY: Attendance 363. Officers:
Chairman, Louis E. Phaneuf, Boston.
Secretary, Alonzo K. Paine, Boston.
Clerk, Frederick J. Lynch, Boston.

SECTION OF RADIOLOGY AND PHYSIOTHERAPY: Attendance 295. Officers:
Chairman, P. F. Butler, Boston.
Secretary, A. H. Ring, Arlington Heights.

Adjourned at 11:45 a. m.

JOHN W. BARTOL,
Secretary pro tempore.

ADMISSIONS RECORDED FROM JUNE 6, 1928, TO JUNE 12, 1929

Year of Admission	Residence	Medical College
1928	Ackerly, Samuel Spafford, Worcester	1
1928	Allen, Simeon Carlyle, Roxbury	12
1929	Altman, William Solomon, Boston	12
1929	Ashkins, Joseph Isaiah, Fitchburg	12
1929	Ayman, David, Roxbury	11
1928	Baisley, Charles Reuben, Winchester	11
1928	*Balser, Charles Wadsworth, Lawrence	2
1929	Baratt, Nathan, Worcester	10
1928	Barton, Robert Burns, Wellesley Hills	10
1929	Barrett, Joseph Eagle, Taunton	3
1929	Bauer, Walter, Boston	4
1929	Beetham, William Parkes, Boston	11
1928	Bennett, Theodore, Webster	12
1928	Berkowitz, Benjamin, Boston	12
1928	Bornstein, Benjamin Franklin, Brockton	12
1928	Box, Leonard Francis, Beverly	12
1929	Bragger, James Keenan, Brookline	11
1928	Breen, John Joseph, Lowell	5
1928	Brennan, Jeremiah Francis, Brighton	12
1929	Brown, Elsie Winifred, Somerville	12
1928	Burns, Arthur Vincent, Brighton	12
1928	Burrage, Walter Swan, Brookline	11
1928	Cahill, Ella Prescott, Roxbury	12
1929	*Campagna, Themostocles Vincent, Boston	6
1928	Canzanelli, Pericles, Watertown	12
1929	Caplan, Abraham Nathan, Boston	12
1928	Carella, Joseph James, Belmont	12
1929	Carsley, Sidney Raymond, Palmer	7
1928	Cave, Edwin French, Boston	11
1929	Chamberlin, Ira Iowa, Agawam	10
1928	Christie, Welman Blake, Jamaica Plain	10
1928	Cohen, Benjamin Myron, Cambridge	12
1928	Cohen, Newman, Brighton	12
1928	Collins, Dennis Joseph, Norwood	12
1929	Cooke, Richard Charles, Fall River	12
1928	Cox, Michael John, Pittsfield	12
1929	Dame, Lawrence Raymond, Shelburne Falls	12
1928	Danforth, Mary, Gardner	8
1929	Davidow, Morris Nathaniel, Roxbury	12
1928	DeAsis, Cesareo, Worcester	5
1929	DePrizio, Carl January, Boston	11
1929	Derick, Clifford Lambie, Boston	9
1929	*Dickerman, Charles, Somerville	6
1928	Donaldson, Frederick August, Middleton	11
1929	Donovan, Arthur Bland, Boston	11
1928	Donovan, Paul Royal, Roxbury	12
1929	Downey, Edward Thomas, Somerville	12
1929	Downey, Francis Timothy, Cambridge	12
1928	Draper, Rose Adelaide, Dorchester	12
1928	Dretler, Lewis Robert, Boston	12
1928	Dumouchel, Antoine, North Adams	12
1929	Ellis, Laurence Brewster, Newton Center	11
1928	Espinoza, Daniel, Dorchester	5
1928	Finland, Maxwell, Boston	11
1928	*Flagg, Franklin Ivan, Boston	6
1929	Flynn, John Molloy, Somerville	11
1929	Fournier, Joseph Armand, Fall River	13
1929	Frisbie, Gertrude Flint, Lowell	12
1929	Gagne, Joseph Alfred, Chicopee Falls	13
1928	Gallupe, Henry Ezra, Roxbury	11
1929	Gilbert, Henry Raymond, Needham	11
1928	*Ginsburg, Joel, Dorchester	6
1928	Girardi, Victor Joseph, North Adams	11
1929	Glazer, Lewis, Bridgewater	12
1929	Golden, Sherman Elias, Beverly	11
1928	Goldwyn, Jacob, Worcester	12
1928	Goodale, Ella Jocelyn, Belchertown	12
1928	Goodwin, Edward Everett, Brockton	10
1928	Goodwin, Edward Scott, Roxbury	1
1929	Greenway, Thomas Herbert, Three Rivers	12
1928	Haggart, Gilbert Edmund, New York City (Readmitted by Censors)	11
1929	Hallett, Ronald Payne, Gloucester	10
1929	Healy, James Clarke, Cambridge	12
1929	Heath, Clark Wright, Boston	11
1929	Herman, William, Boston	11
1928	Hershenson, Bert Barnet, Brighton	11
1928	Higgins, Walter, Lawrence	12
1929	Hoover, Walter Boyd, Jamaica Plain	14
1929	Houser, Gerald Frederick, Boston	15
1928	Hoyt, Lyman Howard, Brookline	16
1928	Hunt, Robert Bates, Arlington	11

1929 Hurovitz, Oscar, Roxbury 12
1928 Hurxthal, Lewis Marshall, Boston 11
1928 Hussey, Joseph Michael, East Weymouth 12
1929 Jones, Edward Earl, Brockton 17
1928 *Josselson, Israel W., Boston 6
1929 Kaplan, Israel, Cambridge 12
1928 Kasheta, Francis James, Lawrence 12
1928 Kaufman, Aaron, Fall River 12
1928 Kiefer, Everett Duane, Roxbury 11
1929 King, Frank Oscar, Taunton 7
1928 Kirby, James Caleb, Newton 12
1929 Korb, Charles, Hyde Park 12
1929 Kuhns, John Grove, Roxbury 18
1928 Kundert, Elizabeth, Belchertown 8
1928 Kushner, Israel Louis, Boston 12
1929 Landry, Ernest Joseph, Westfield 13
1928 Lappin, Albert Saul, Hyde Park 12
1929 Leighton, Leslie Hazelton, Dorchester 12
1928 Lemaitre, George Lanouette, Methuen 13
1928 Levenson, Walter Sabin, Brookline 11
1928 Lincoln, Robert Edward, West Medford 10
1928 MacDonald, George Herbert, Everett 12
1928 Malone, Stephen Joseph, Belmont 12
1928 Mahoney, Roy Bernard, Chicopee Falls 19
1928 May, George Elliott, Newton Center 11
1928 McAdams, James Carlin, Fall River 17
1928 McClure, William Lionel, Brookline 11
1928 McNeil, Donald, Brookline 11
1929 *Merlis, Isaac, Boston 6
1929 *Metivier, Armand Oliva, Chicopee 20
1928 *Miller, Howard Stephen, Taunton 6
1929 Moloney, Albert Michael, South Boston 12
1928 Morais, Wilfrid Aurelien, Fall River 12
1928 Morrison, Gordon Mackay, East Boston 12
1928 Muller, Gulli Lindh, Cambridge 21
1929 Murray, Anna Margaret, Webster 22
1929 Nelson, Nels Albin, Roxbury 23
1929 Neptune, Edgar McClain, Brookline 11
1929 *Nichols, Robert Henry, Waban 6
1928 Norton, Hermon, Newton Center 11
1929 Oakes, Fitz Albert, Gloucester (Readmitted by Censors) 11
1928 O'Connell, Maurice Winthrop, West Roxbury 12
1928 Olef, Isadore, Boston 11
1929 O'Neil, Arthur William, Salem 12
1928 Osgood, Winthrop Bancroft, Lowell 12
1928 Palmer, Robert Sterling, Boston 11
1928 Park, Harry Linwood, Medfield 12
1929 Perkins, Archie Elmer, Fitchburg 24
1928 Perkins, Clifton Todd, Worcester 10
1928 Perlmutter, Samuel Maurice, Waltham 12
1928 Peters, Andrew, Pittsfield 21
1929 Petrone, Francis Joseph, Fall River 11
1928 Plumer, Herbert Edric, Boston 10
1928 *Pollano, Walter, Lawrence 6
1928 *Powers, John Philip, North Grafton 6
1929 Quirk, Thomas Christopher, Watertown 12
1928 Redmond Jr., James William, South Boston 9
1929 Rifkin, Abraham, Brockton 5
1929 Ritchie, Morris James, Chelsea 10
1929 Roberts, Sumner Mead, Jamaica Plain 11
1929 Rosenberg, Joel, Roxbury 12
1928 *Rust, George Stevens, Gloucester 6
1928 *Ryan, James Patrick, Salem 6
1929 Saphirstein, Hyman, Roxbury 12
1928 Schwartz, George, Malden 12
1929 Seed, Raymond Charles Joseph, Lawrence 25
1929 Servetnick, Abraham, Bradford 10
1928 Shahon, Henry Israel, Boston 12
1929 Shamlian, Charles Harry, Springfield 12
1928 Shrier, Hyman, Boston 12
1928 Shulman, Simon, Worcester 12
1928 Silver, Maurice Jacob, Dorchester 26
1928 Slowick, Joseph Edmund, Palmer 12
1929 Smith, George Van Sicien, Brookline 11
1928 Spector, Nathan Moses, Needham 12
1928 Sullivan, Daniel Francis, Jr., Hartford, Conn. 7
1928 Sullivan, George Mortimer, Lowell 7
1929 Swan, Charles Louis, Jr., Milton 11
1928 Sweeley, Crawford Kenneth, Somerville 12
1928 Thayer, Rockwood Harland, Worcester 11
1929 Tormey, Leonard Llewellyn, Worcester 13
1928 Tuttle, George Herman, South Acton 11
1928 Vogt, Edward Charles, Roxbury 16
1929 Walter, George, Quincy 27
1929 Wells, Ralph Horace, Arlington 10
1928 West, Anthony John, Mattapan 12
1929 Wheeler, Bancroft Cheever, Worcester 11
1929 Whitaker, Lester Ray, Roxbury 11
1928 Whitney, Arthur Thomas, Worcester 10
1928 Wood, Marshall Stephen, Pittsfield 12
1928 Woodward, Katharine Fox, Worcester 28
1929 Wylie, Earl John, Cambridge 12
1928 Young, William Bartholomew, Cambridge 11
1928 Zibel, Nathan, Mattapan 12

New Fellows 173 Readmitted by Censors 2
Total 175

KEY TO MEDICAL COLLEGES

1—Yale University School of Medicine
2—Loyola University School of Medicine
3—University of Tennessee College of Medicine
4—University of Michigan Medical School
5—St. Louis University School of Medicine
6—Middlesex College of Medicine and Surgery
7—University of Vermont College of Medicine
8—Woman's Medical College of Pennsylvania
9—McGill University Medical School
10—Boston University School of Medicine
11—Harvard University Medical School
12—Tufts College Medical School
13—University of Montreal Faculty of Medicine
14—Washington University School of Medicine, St. Louis
15—University of Toronto Medical School
16—State University of Iowa College of Medicine
17—University of Pennsylvania School of Medicine
18—Johns Hopkins University Medical School
19—Georgetown University School of Medicine
20—College of Physicians and Surgeons, Boston
21—Columbia University College of Physicians and Surgeons
22—Dalhousie University Faculty of Medicine
23—Long Island College Hospital
24—Hahnemann Medical College, Chicago
25—Jefferson Medical College of Philadelphia
26—Rush Medical College of the University of Chicago
27—University of Maryland School of Medicine and the College of Physicians and Surgeons
28—University of Virginia Department of Medicine

*Indicates that the candidate's diploma was approved by the Committee on Medical Education and Medical Diplomas.

DEATHS REPORTED FROM JUNE 6, 1928, TO JUNE 12, 1929

Admitted	Name	Place of Death	Date of Death	Age
1921	Bacon—Joseph Ambrose Patrick	Lawrence	June 5, 1928	61
1896	Baldwin—Sanford Oscar	Framingham	Mar. 24, 1929	61
1920	Belisle—Eugene Simeon	Worcester	Aug. 4, 1928	36
1890	†Berry—Lauriston M.	Guernsey, Wyo.	July 6, 1922	78
1885	Birmingham—Robert Michael	Lawrence	Nov. 27, 1928	70
1904	Bond—Walter Legrand	West Somerville	May 5, 1929	51

1889	Bond—Willis George	Revere	Oct. 30, 1928	72
1906	Borden—George Edward	Fall River	June 8, 1929	45
1893	†Bossidy—John Collins	Pittsfield	July 8, 1928	68
1903	Brayton—Roland Walker	Dorchester	June 20, 1928	50
1893	Carleton—Dudley	Springfield	Mar. 13, 1929	60
1902	Cary—Foster Harrington	Denver, Colo.	Dec. 23, 1928	54
1870	†Clapp—Herbert Codman	Boston	Apr. 30, 1929	83
1901	Clark—Edward James	Lowell	Nov. 4, 1928	49
1896	Cogswell—William	Haverhill	Sept. 26, 1928	61
1892	Cooper—Almon	Brookline	May 21, 1929	66
1893	Courtney—Joseph William	Boston	June 6, 1928	60
1887	†Davenport—James Henry	Providence, R. I.	Oct. 15, 1928	66
1887	Donovan—Michael Ricard	Salem	Feb. 1, 1929	68
1900	Dorgan—Joseph Aloysius	Lawrence	July 25, 1928	55
1894	Dunn—Charles Stein	Haverhill	Jan. 7, 1929	69
1890	Dwyer—John Edward	Cambridge	June 10, 1929	65
1913	Felch—George Alfred	Watertown	Nov. 22, 1928	58
1877	Gannett—William Whitworth	Boston	Apr. 21, 1929	75
1908	George—Frank William	Worcester	Dec. 19, 1928	50
1903	Granger—Frank Butler	Allston	Oct. 23, 1928	53
1877	Green—Charles Montraville	Brookline	Nov. 20, 1928	77
1925	Gross—Joseph Edward	Fall River	Mar. 10, 1929	31
1910	Guild—Edward Frank	Chelsea	Oct. 13, 1928	64
1881	†Haskins—Solomon Foot	Hyannis	Oct. 4, 1928	70
1886	Hill—Ira Clarke	Springfield	May 7, 1929	71
1882	Hodgdon—Andrew Hall	Dedham	Sept. 13, 1928	70
1881	†Hubbard—Josiah Clark	Holyoke	Oct. 1, 1928	75
1901	Hutchinson—Walter Perkins	Abington	May 14, 1925	58
1898	Janes—George Herbert	Westfield	May 27, 1929	65
1890	Jelly—Arthur Carlton	Roxbury	Nov. 19, 1928	72
1886	†Keefe—Daniel Edward	Springfield	Mar. 9, 1929	80
1902	Knight—Charles Eugene	Rockland	Jan. 20, 1929	73
1909	LeBoeuf—Alfred Thomas	Salem	Jan. 18, 1929	46
1906	Lowney—Dennis Joseph	Santa Monica, Cal.	June 17, 1928	55
1890	†MacMillan—Andrew Louis	Concord, N. H.	Nov. 17, 1928	79
1917	McCarthy—Charles Daniel	Malden	Feb. 18, 1929	37
1878	McCarty—James Joseph	Minneapolis, Minn.	Mar., 1928	70
1900	McDermott—Joseph Edward	Charlestown	Feb. 2, 1929	50
1886	McGannon—Thomas Gerald	Lowell	Mar. 30, 1927	67
1893	McGillicuddy—John Timothy	Worcester	Nov. 14, 1928	61
1877	†Miller—Ernest Parker	Fitchburg	Oct. 14, 1928	77
1900	Milot—Wilfrid Francois	Attleborough	Oct. 19, 1928	57
1910	Norton—Herbert Rozelle	Dorchester	Jan. 30, 1929	66
1899	Packard—George Henry	Roxbury	Sept. 10, 1928	64
1876	†Paddock—William LeRoy	Dalton	Sept. 25, 1928	78
1893	Parker—Wallace Asahel	Auburn	May 26, 1928	64
1906	Pascoe—William Whelan	Adams	Dec. 2, 1928	59
1922	Rice—Harry Edwin	Springfield	Jan. 21, 1929	68
1898	Robie—Walter Franklin	Winchendon	Aug. 29, 1928	61
1902	Rose—William Henry	Worcester	Sept. 26, 1928	52
1905	Russell—Walter Burton	Springfield	Aug. 3, 1928	55
1919	Sartwell—Ransom Harvey	Howard, R. I.	Jan. 11, 1929	41
1884	†Sawyer—Elihu LeRoy	Orlando, Fla.	Nov. 17, 1928	72
1879	Schwab—Edmand	Cincinnati, O.	Feb. 3, 1929	70
1904	Seymour—Malcolm	Boston	Nov. 17, 1928	50
1896	Shanahan—Thomas Joseph	Brookline	Jan. 17, 1929	55
1873	Shattuck—Frederick Cheever	Brookline	Jan. 11, 1929	81
1908	Shay—Charles Edwin	Roxbury	Jan. 29, 1929	47
1895	Shay—Thomas Maguire	Roxbury	Jan. 11, 1929	67
1885	Simpson—Charles Edward	Lowell	Nov. 13, 1925	63
1884	†Smith—Walter Anson	Shelburne Falls	Mar. 29, 1929	72
1897	Soule—Horace John	Winthrop	Jan. 21, 1929	68
1880	†Standish—Myles	Cambridge	June 26, 1928	76
1892	†Stutson—William Peckham	Northampton	Dec. 1, 1928	81
1893	†Sylvester—William Hillman	Natick	Nov. 10, 1928	78
1903	Thorndike—Townsend William	Cambridge	Apr. 5, 1929	56
1897	Tripp—George Alston	Worcester	June 14, 1928	55
1918	Wallace—Harold Lowe	Brookline	Apr. 25, 1929	48
1909	Warren—John	Boston	July 17, 1928	53
1880	Webber—Frederick Ward	Newton	June 19, 1928	70
1894	Welch—Edward John	Lowell	Feb. 19, 1929	65
1874	†Wescott—William Henry	Belfast, Me.	July 8, 1928	88
1887	†Williams—Charles Crosby	Los Angeles, Cal.	Jan. 18, 1928	72
1902	Worth—Edward Philip	Edgartown	Jan. 20, 1929	56

†Retired Fellow.

Total number of deaths, 80.

THE MASSACHUSETTS MEDICAL SOCIETY

OFFICERS ELECTED BY THE COUNCIL, JUNE 11, 1929

President: Robert B. Greenough, Boston, 8 Marlborough Street.
Vice-President: Lester C. Miller, Worcester, 14 Oxford Street.
Secretary: Walter L. Burrage, Brookline, 182 Walnut Street.
Treasurer: Arthur K. Stone, Framingham Center, Auburn Street.

STANDING COMMITTEES FOR 1929-1930

Of Arrangements

E. P. Hayden, H. Q. Gallupe, T. H. Lanman, F. H. Colby, G. P. Reynolds.

On Publications

Homer Gage, J. W. Bartol, R. I. Lee, R. B. Osgood, **E. W. Taylor.**

On Membership and Finance

D. N. Blakely, Algernon Coolidge, Samuel Crowell, Gilman Osgood, H. L. Smith.

On Ethics and Discipline

David Cheever, W. D. Ruston, S. F. McKeen, A. C. Smith, R. L. DeNormandie.

On Medical Education and Medical Diplomas

P. P. Johnson, A. G. Howard, H. P. Stevens, C. H. Lawrence, C. A. Sparrow.

On State and National Legislation

R. B. Greenough, T. J. O'Brien, F. E. Jones, Shields Warren, A. W. Marsh.

On Public Health

Dwight O'Hara, E. F. Cody, R. I. Lee, T. F. Kenney, F. G. Curtis.

On Malpractice Defence

F. G. Balch, E. D. Gardner, F. B. Sweet, R. P. Watkins, A. W. Allen.

SPECIAL COMMITTEES

Committee on the New England Medical Council

J. S. Stone, W. P. Bowers, B. W. Paddock, T. H. Lanman, R. B. Greenough.

Committee for the Prevention and Cure of Cancer

R. B. Greenough, F. G. Balch, P. E. Truesdale, G. H. Bigelow, G. F. Martin.

Committee on Permanent Home

T. J. O'Brien, S. B. Woodward, Henry Colt, C. G. Mixter, J. S. Stone, J. M. Birnie, R. B. Greenough.

DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

DELEGATES	ALTERNATES
F. B. Lund, Boston.	W. H. Robey, Boston.
E. F. Cody, New Bedford.	P. E. Truesdale, Fall River.
H. G. Stetson, Greenfield.	L. A. Jones, Pondville.
C. E. Mongan, Somerville.	Gilman Osgood, Rockland.
J. F. Burnham, Lawrence.	W. C. Leary, Springfield.
R. I. Lee, Boston.	C. H. Lawrence, Boston.

PRESIDENTS OF DISTRICT MEDICAL SOCIETIES

VICE-PRESIDENTS (*Ex-Officiis*)

Arranged according to seniority of fellowship in the Massachusetts Medical Society

T. H. McCarthy, Brockton.
T. J. Robinson, Taunton.
T. L. Jenkins, Topsfield.
G. L. Richards, Fall River.
A. G. Scoboria, Chelmsford.
F. B. Sweet, Springfield.
S. F. McKeen, Brookline.
Lincoln Davis, Boston.
F. T. Woodbury, Wakefield.
W. E. Denning, Worcester.
F. R. Dame, Athol.
Fresenius Van Nüys, Weston.
G. M. Sheahan, Quincy.
W. K. Clark, Greenfield.
R. L. Toppan, Newburyport.
S. M. Beale, Jr., Sandwich.
M. S. Eisner, Pittsfield.
F. E. O'Brien, Haydenville.

COUNCILORS—1929-1930

ELECTED BY THE DISTRICT MEDICAL SOCIETIES AT THEIR ANNUAL MEETINGS, APRIL 15 TO MAY 15, 1929

NOTE:—The initials M. N. C. following the name of a Councilor indicate that he is a member of the Nominating Committee. V. P. indicates that a member is a Councilor by virtue of his office as President of a district society and so Vice-President of the general society. C. indicates that he is chairman of a standing committee, Sec. that he is secretary of his District Society.

BARNSTABLE

S. M. Beale, Jr., Sandwich, V. P.
J. L. Chute, Osterville, Sec.
E. F. Curry, Sagamore
W. D. Kinney, Osterville, M. N. C.

BERKSHIRE

M. S. Eisner, 86 North Street, Pittsfield, V. P.
R. J. Carpenter, 85 Main Street, North Adams, M. N. C.
C. S. Chapin, 321 Main Street, Great Barrington.
Henry Colt, 7 North Street, Pittsfield.
H. J. Downey, 184 North Street, Pittsfield, Sec.
B. E. Howe, 2 Center Street, Adams.
P. J. Sullivan, 48 Curtis Street, Dalton.

BRISTOL NORTH

T. J. Robinson, 10 Spring Street, Taunton, V. P.
William H. Allen, 70 North Main Street, Mansfield.
A. R. Crandell, 48 Church Green, Taunton.
F. A. Hubbard, 157 High Street, Taunton, M. N. C.
J. L. Murphy, 23 Cedar Street, Taunton, Sec.

BRISTOL SOUTH

G. L. Richards, 124 Franklin Street, Fall River, V. P.
J. A. Barre, 1555 Pleasant Street, Fall River.
R. B. Butler, 241 Pine Street, Fall River.
E. F. Cody, 105 South Sixth Street, New Bedford, M. N. C.
E. F. Curry, 499 Hanover Street, Fall River.
D. J. Fennelly, 276 Winter Street, Fall River.
E. D. Gardner, 150 Cottage Street, New Bedford.
S. V. Merritt, 297 Osborn Street, Fall River.
H. E. Perry, 159 Cottage Street, New Bedford.
Charles Shanks, 645 Kempton Street, New Bedford, Sec.
I. N. Tilden, Barstow Street, Mattapoisett.
Russell Wood, 331 Union Street, New Bedford.

ESSEX NORTH

R. L. Toppan, 148 High Street, Newburyport, V. P.
E. S. Bagnall, 281 Main Street, Groveland.
J. F. Burnham, 567 Haverhill Street, Lawrence, Sec.
L. R. Chaput, 3 Washington Square, Haverhill.
H. F. Dearborn, 193 Garden Street, Methuen.
A. P. George, 397 Main Street, Haverhill.
T. R. Healy (Newburyport), 370 Marlborough Street, Boston, M. N. C.
T. W. Murphy, 55 Bradford Street, Lawrence.

ESSEX SOUTH

T. L. Jenkins, Prospect Street, Topsfield, V. P.
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CHOLECYSTOGRAPHY*

An Examination of 1000 Cases By The Oral Method

BY SAMUEL A. ROBINS, M.D.,† AND BERNARD I. GOLDBERG, M.D.†

THE sudden impetus in the advancement of knowledge regarding gall-bladder physiology must be attributed to cholecystography. The gall-bladder has long been regarded as an organ of storage for bile. The emptying and concentrating function of the gall-bladder was little understood. Although a great deal of information has been gathered, the actual mode of emptying is still a controversial matter, about which there are two chief views: (1) the passive emptying of the organ, a conception upheld chiefly by Graham, and (2) the active emptying, which attributes to the gall-bladder the function of active contractility. The latter view has been supported chiefly by Boyden,[1, 2] Whitaker,[3] Ivy and Oldberg,[4] Higgins and Mann[5] and others[6].

Graham[7, 8] believes that the gall-bladder is emptied by the elastic recoil of the distended viscus on release of the common duct sphincter, the inflow and outflow of bile from the liver through the periodic closing and opening of the sphincter, and suction due to the stream of bile from the liver as it passes the mouth of the cystic duct. The basis of his arguments is that the gall-bladder has never been seen to contract spontaneously. The rhythmic contractions noted by Bainbridge and Dale[9] he discounts, owing to their synchronism with respiratory movements and hence caused by respiration. Winkelstein[10, 11] believes that the pressure of the respiratory excursion is the chief factor in causing expulsion of the gall-bladder contents.

Experimental evidence lends very little support to the effect of respiration. It was shown that an artificial gall-bladder did not empty after feeding and a cat's gall-bladder containing iodized oil did not by roentgenogram show emptying on inspiration or struggling even after the common duct sphincter has been cut[3]. Fluoroscopic study also refutes this theory. It has been noted that pressure on the gall-bladder through the abdominal wall failed to expel its contents[3]. This experiment was repeated by us on human beings many times with the same results. We have also observed that violent coughing and vigorous respiratory gymnastics did not cause any visible effects upon the size of the gall-bladder. Levine[12] also reports that he has been able to observe the active contractions of the gall-bladder in a case.

Graham and his associates[8, 13, 14] have shown that it is mechanically possible for the gall-bladder to empty itself by means of the two mechanisms of a gradual washing out by the inflow of fresh bile and of elastic recoil, and Kodama[15] has devised a model to demonstrate this manner of emptying.

The predominating evidence is that the gall-bladder takes an active part in its emptying. The gall-bladder can be made to contract and empty by various drugs, such as pituitrin[16]. Boyden[17, 18] has closely followed the changes in the shape of the gall-bladder during digestion and has concluded that the gall-bladder expels its contents by the force of its own musculature. Whitaker has inserted human gall-stones into the gall-bladders of cats, only to find the stones at the entrance of the duct into the duodenum. Two food elements—fat and egg yolk—are superior in causing emptying of the viscus. After the ingestion of fat the gall-bladder may be completely emptied of all bile in 1½-2 hours. Boyden deprived the gall-bladders of cats of all intrinsic nerves and still obtained a response to egg yolk and concluded that they must have been activated by substances in the blood. Ivy and Oldberg[4] claim to have actually isolated such a substance from secretin which produced contraction and evacuation of the gall-bladder when injected intravenously.

Another important function is the concentration of bile. This is the fundamental reason why cholecystography is feasible. Following the absorption of the dye, the liver parenchyma cells exclusively are endowed with the function of conjugating the various phenols used and eliminating them in the bile. The secondary concentration allows the opaque dye to cast a sufficiently dense shadow on the roentgenogram.

Rous and McMaster[19] showed that the gall-bladder could concentrate the bile 6.8 to 7 times or more in 24 hours, the process being accomplished by the withdrawal of fluid by osmosis and diffusion. Hohlweg[20] calculated that 40 c. c. of bile found in the gall-bladder represented from 240 to 400 c. c. of bile from the liver. Evidence of this function is seen in some interesting experiments by Mann and Bollman[21]. They found that, following ligation of the common bile duct in dogs, icterus does not develop until 36-48 hours after operation. If the gall-bladder is removed when the common duct is ligated, the urine and plasma contain definite amounts of bile pigment within 3-6 hours after operation and the sclerae and mucous membranes are definitely yellow within 24 hours. The difference in the rate of accumulation of bile pigment is considered as evidence of the ability of the gall-bladder to concentrate the bile secreted by the liver. To more clearly re-

*From the Departments of Roentgenology and Medicine, Beth Israel Hospital.

†For record and address of author see "This Week's Issue," page 146.

semble the clinical status of affairs, they produced a specific cholecystitis by the intravenous injection of sublethal amounts of chlorinated soda. The degree of exclusion of the gall-bladder, that is, the degree of involvement of the gall-bladder, controlled the time of appearance and rate of development of bile pigment in the blood and urine of the animals, following ligation of the common duct. Small injections, producing mild disease, delayed the jaundice as compared with the larger doses.

When Meltzer[22] propounded the law of reciprocal action as related to the sphincter of Oddi and the gall-bladder, little attention was directed to it. Since Lyon's clinical application of this law in the form of non-surgical biliary drainage, a vast literature has sprung up. Again, two schools of thought arose. Based on certain clinical experiences Lyon[23] concluded that the bile from different portions of the biliary system was susceptible of differentiation, and that it could be obtained by relaxing the sphincter and contracting the gall-bladder by magnesium sulphate via the duodenal tube, according to Meltzer's law. This reciprocal action has been denied by Whitaker[3] on experimental grounds. He denervated gall-bladders by stripping the hepatic artery, portal vein and common bile duct, in some cases severing the common bile duct and maintaining continuity by a special cannula. Under these conditions the gall-bladder will empty when confronted with the appropriate stimulus as food. That relaxation of the sphincter is not the necessary preliminary to emptying of the gall-bladder is demonstrated by cutting the sphincter, in which case the gall-bladder retains its contents until the animal is fed. The large number of reports from divergent sources attesting the empirical therapeutic value of the Meltzer-Lyon procedure cannot, however, be entirely disregarded.

For diagnostic purposes, nevertheless, the status of the gall-bladder can be much better studied by the cholecystographic method. From our knowledge of the normal physiology of the gall-bladder it is possible to draw some conclusions regarding perverted functions of the pathological gall-bladder. The development of the oral method of cholecystography has made it possible to study easily a large number of cases.

The oral method of cholecystography is a qualitative and not a quantitative test; therefore the degree of density does not determine the extent of the functional disturbance, except where the variation is marked. We classify our cases as presenting a densely outlined or poorly outlined gall-bladder on the cholecystogram. The density of the normally functioning gall-bladder on the roentgenogram depends upon the amount of the dye absorbed and subsequently concentrated and the results will greatly depend on the absorptive power of the intestinal tract. The failure of visualization of the gall-bladder at one examination is inconclusive for a positive diagnosis, and we always advise a re-examination if the gall-bladder shadow is not seen or is poorly outlined. If the results are the same at subsequent examinations, the diagnosis of a pathological gall-bladder is made.

The advantages of cholecystography as a routine procedure in the study of gastro-intestinal disturbances are many. The intravenous method is more reliable in the very early cases of functional disturbances, but we find, in the analysis of the final statistical results, such a close approximation between the oral and intravenous methods as to warrant the former as the one of choice.

In our study the sodium salts of tetraidophenolphthalein in the different available forms were used, and we found that the results were about the same, provided the preparations were freshly made. The dye is rendered insoluble when acidified and we have noted that when administered as a liquid in a palatable vehicle, there was not only less likelihood of a reaction than when capsules or pills were used, but uniformly better results were obtained.

The only reactions of importance encountered in our patients were nausea, diarrhea and vomiting. Table I represents the incidence of nausea, diarrhea, and vomiting in 980 cases examined.

TABLE I

INCIDENCE OF REACTIONS					
No.	Nausea 166	Diarrhea 148	Vomiting 133	No Reaction 533	Total 982
%	16.93	15.1	13.5	54.48	

*Total should be 980.

Of the total 980 cases the best results were obtained in 183 patients, who received 3 to 4 grams of the dye freshly prepared by dissolving it in 30 c. c. of distilled water and dispensed to the patient in a dark bottle. Instructions were given to add the contents of the bottle to one-half a glass of grape juice containing cracked ice and to drink the mixture after stirring for about 2 to 3 minutes, and then return for examination 12 to 14 hours later without partaking of food in the interim.

Films were then taken and carefully examined. If the gall-bladder shadow was well outlined, the patient was instructed to eat a meal containing fat and protein (cereal and cream; egg; toast and coffee) and to return two hours later for more films of the gall-bladder. The patient was allowed a light lunch in the evening two hours before the dye was taken. The grape juice serves the double purpose of acting as a palatable vehicle and also as an acidifying agent. Patients with irritable bowels and marked diarrhea may be given 15 minims of tincture of opium the night before the re-examination to prevent the purging.

Preliminary plates of the kidneys and gall-bladder were taken in every case to rule out

stones. A complete barium study of the duodenum was then made to determine the position and mobility of the duodenum. Plain films of the gall-bladder before the dye is given are essential because opaque stones may be overshadowed when the gall-bladder is densely outlined.

The patient takes the dye on the evening of the day of the gastro-intestinal examination and returns 12 to 14 hours later for the cholecystogram. The barium-filled transverse colon helps to rule out stones, which otherwise may be simulated by the mottling due to gas in the hepatic flexure, and is also of value in demonstrating adhesions in this region. To determine the presence of adhesions about the hepatic flexure we found the following technic helpful. The ulnar side of the left hand is placed between the liver and colon during deep inspiration and pressed slightly downward during forced expiration. The patient then experiences pain if adhesions are present. This test is done under fluoroscopic control. Gas in the duodenum is troublesome and often may simulate mottling due to stones. To overcome this difficulty we have the patient walk about for five minutes and instruct him to drink half a glass of water. Then another film is taken. Usually the walking and water displace the gas from the duodenum.

The size, shape and position of the gall-bladder may vary in the same individual at different examinations. It has been our constant observation that in the cases where the gall-bladder does not show any disturbed function and is not adherent, its long axis lies approximately at right angles to the edge of the liver with but a slight variation. This position of the normal gall-bladder has influenced some observers, as Sweet[24] and Halpert[25], believing that the gall-bladder contents are not excreted but absorbed entirely—an untenable view in the face of the overwhelming evidence to the contrary. The gall-bladder which is buried by adhesions lies well under the liver and parallel to its edge.

The technic of cholecystography must be exact. Care must be taken that the patient holds his breath during the exposure of the film. The slightest motion may lead to erroneous conclusions. The normal gall-bladder is densely outlined, is oblong or pear-shaped, regular in contour and of homogeneous density; it should empty completely or contract to about one-third of its original size two hours after a fat-protein meal. The gall-bladder always contracts laterally. Boyden has mathematically calculated the rate of contraction and evacuation and graphically represented the changes in shape after a standard meal. The abnormal gall-bladder is poorly outlined, irregular in contour, mottled and does not vary in size or shape after a fat and protein meal. We have observed in two cases enlargement of the gall-bladder instead of contraction after a fatty meal.

Pathological gall-bladders may be divided into three groups:

1. Disease of the mucous membrane.
2. Disease of the muscle.
3. Changes in the serosa.

The invisibility of the gall-bladder 12 to 14 hours after ingestion of the dye usually indicates lack of concentration of the bile, which is due to a disturbance in the mucosa, excepting when there is ductal obstruction, especially of the cystic duct, or a failure of intestinal absorption. This can be paralleled experimentally by curetting the gall-bladder mucosa, following which there is no shadow observable for several days. On the other hand a distinct gall-bladder outline which does not vary in size two hours after a fatty meal signifies loss of elasticity in the gall-bladder wall brought about by changes in the musculature. Irregularities of contour, kinks and abnormal positions, together with impairment of duodenal mobility and fixation of the hepatic flexure, are consistent with adhesion and changes in the serosa.

The reasons for failure to visualize the gall-bladder shadow may be divided into three groups:

1. *Technical*
   a. The failure of the patient to take the dye. This sometimes happens with patients who fail to follow instructions and with highly neurotic individuals.
   b. Failure of patient to stop breathing during exposure.
   c. Faulty photographic technic.
2. *Mechanical*
   a. Undissolved capsules in the bowel, when capsules are used.
   b. The gall-bladder outline may be obscured by intestinal shadows.
3. *Physiological*
   a. Severe vomiting.
   b. Hypermotility of the colon.
   c. Faulty absorption.
   d. Taking of food before examination.
   e. Obstructive and catarrhal jaundice.
   f. Impaired liver function.

Nine cases of catarrhal jaundice examined showed no gall-bladder shadow. Upon re-examination of some of these cases after termination of the jaundice, the gall-bladder outline was well defined and contracted well two hours after a fatty meal. In a large percentage of duodenal ulcer cases no gall-bladder shadow was visible. Following cholecystotomy no shadows were observed in 9 patients in whom severe gastric disturbances persisted after operation. A blunt or rounded liver edge was observed in certain cases of cholecystitis. This would tend strongly to indicate the close relationship between hepatitis and cholecystitis which Gra-

ham[26] and Martin[27] have pointed out. It is of interest to mention that cholecystographic examinations were made in several cases of cardiac disease with signs of partial decompensation and no gall-bladder outline was obtained, presumably a result of hepatic congestion or of delayed absorption. The indirect signs of the so-called "pathological gall-bladder" advanced by George[28] are of great help, especially when the changes in the gall-bladder wall and bile are themselves sufficient to cast a shadow on a film. The addition of cholecystography places the roentgen diagnosis of gall-bladder diseases on a par with that of gastro-intestinal diseases. A visual gall-bladder outline at the preliminary examination without the dye, and the absence of a denser shadow on repeated examinations by cholecystography, lead to a positive diagnosis of gall-bladder disease.

A summary of 1014 cases examined is represented in Table II.

Group I	502 cases showed good gall-bladder outlines	—49.51%
Group II	343 cases showed poor gall-bladder outlines	—33.82%
Group III	169 cases showed no gall-bladder outlines	—16.67%

Group I contains 502 cases with normal gall-bladder outlines. Of the 343 in Group II which showed poor gall-bladder outlines, the results of 111 patients who were operated upon are known. Ninety-five cases or 85.58% showed definite pathological changes in the gall-bladder. The remaining 16 presented various findings: 9 showed chronic appendicitis; 2 duodenal ulcers; 3 ovarian cysts; 1 large umbilical hernia; 1 pericolic membrane. Of the 169 remaining in Group III where no gall-bladder shadow was visible 71 cases came to operation, at which time a fraction over 87% proved the accuracy of the diagnosis.

REFERENCES

1 Boyden, E. A.: Surg., Gyn. and Obs., 1928, 46:30.
2 Boyden, E. A.: Proc. Soc. Exp. Biol. and Med., 1927, 24:353.
3 Whitaker, L. R.: Am. J. Physiol., 1926, 78:411.
4 Ivy, A. C., and Oldberg, E.: J. Am. Med. Assoc., 1928, 90:445.
5 Higgins, G. M., and Mann, F. C.: Am. J. Physiol, 1926, 78:339.
6 McMaster, P. D., and Elman, R.: J. Exper. Med., 1926, 44:173.
7 Graham, E. A.: Am. J. Med. Sc., 1926, 172:625.
8 Graham, E. A.: Surg., Gyn. and Obs., 1927, 64:153.
9 Bainbridge, F. A., and Dale, H. H.: J. Physiol., 1905-06, 33:138.
10 Winkelstein, A., and Aschner, P. W.: Am. J. Med. Sc., 1926, 171:104.
11 Winkelstein, A.: J. Am. Med. Assoc., 1923, 80:1748.
12 Levine, S.: Arch. Int. Med., 1927, 40:420.
13 Graham, E. A., Cole, W. H., Copher, G. H., and Kodama, S.: Ann. Surg., 1926, 84:343.
14 Copher, G. H., Kodama, S., and Graham, E. A.: J. Exper. Med., 1926, 44:65.
15 Kodama, S.: Am. J. Physiol., 1926, 77:385.
16 Pribram, B. O., Grunenberg, K., and Strausz, O.: Deutsch. med. Wochensch., 1925, 51:1429.
17 Boyden, E. A.: Anat. Record, 1925, 30:333.
18 Boyden, E. A.: Anat. Record, 1926, 33:201.
19 Rous, P., and McMaster, P. D.: J. Exper. Med., 1921, 34:47.
20 Hohlweg, H.: Deutsch. Arch. f. klin. Med., 1912, 108:255.
21 Mann, F. C., and Bollman, J. L.: J. Lab. and Clin. Med., 1925, 10:540.
22 Meltzer, S. J.: Am. J. Med. Sc., 1917, 153:469.
23 Lyon, B. B. V.: Non-Surgical Drainage of the Gall Tract. Lea & Febiger, 1923.
24 Sweet, J. E.: Inter. Clin., 1924, 34 S, 1:186.
25 Halpert, Bela: Med. Klin., 1924, 20:408, 1830.
26 Graham, E. A.: Surg., Gyn. and Obs., 1918, 26:521.
27 Martin, W.: Ann. Surg., 1927, 85:535.
28 George, A. W., and Leonard, A. D.: The Pathological Gall-bladder Roentgenologically Considered. N. Y., 1926.

LOCAL ANAESTHESIA IN FIRST AND SECOND STAGE LABOR*

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IN June 1928, I submitted to this JOURNAL a preliminary report of original work on the application of novocain as an agent to break the pain reference arc in the first stage of labor. I now wish to present results drawn from 100 cases, showing the feasibility and value of this procedure.

It may be well briefly to review the physiology and anatomy of pain, and, particularly, referred pain in its direct association with labor.

Mackenzie described the mechanism of referred pain as a stimulus set up in an organ which is carried to the cord centre by the splanchnic nerves and in the centre the stimulus extends beyond its own cells, affecting neighboring cells and producing a state of hyperirritability of that segment. Normal impulses from the skin coming into this irritable segment are recognized by the brain as pain and referred to the peripheral areas supplied by that segment.[1]

Weiss and Davis demonstrated that this pain could be abolished by anaesthetizing the skin and so preventing any peripheral impulses from entering the hyper-sensitive centre.[2]

In labor, the contractions of the uterus set up repeated stimuli which cause the cord centres supplying the uterus to become hyperirritable. The normal or non-exaggerated skin impulses entering these irritable centres are recorded by the brain as pain arising in those skin areas. By accurately determining and infiltrating these areas with novocain we can destroy the perception of referred pain. It is of interest to note that Weiss and Davis observed, independently, in their experiments that subcutaneous injection proved to be of little or no value as compared to intradermal infiltration.

The innervation of the uterus is by the ninth to the twelfth thoracics, branches of the first lumbar, and third and fourth sacrals. The ninth thoracic has its somatic level one-third of the way between the umbilicus and the ensiform. Each of the succeeding nerves supplies the next lower segment of skin, with the twelfth thoracic

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†For record and address of author see "This Week's Issue," page 146.

FIRST STAGE

		Para	Dilat. at Infilt.	Length of Labor	Duration of Analgesia	Pain returned & duration until delivery	
1	R.S.	I	I fing.	17 hours	6 hours	6 hours	
2	E.A.	III	2½ fing.	9 hours	4 hours	None	
3	C.L.	I	3½ fing.	12 hours	4 hours	None	
4	R.McK.	II	3 fing.	16 hours	4¼ hours	2 hours	Extremely neurotic with a snug pelvis.
5	M.F.	I	3 fing.	14 hours	4hr.50min.	None	
6	E.C.	IV	4 fing.	6 hours	2 hours	None	
7	J.L.	V	2 fing.	14 hours	2½ hours	6 hours	Poor infiltration.
8	M.M.	IV	2 fing.	8 hours	2 hours	3½ hours	Poor infiltration.
9	M.F.	I	2 fing.	11 hours	3 hours	1 hour	
10	C.M.	II	2 fing.	15 hours	4 hours	5 hours	No progress due to high transverse head. High forcep del.
11	S.G.	I	1 fing.	20 hours	5 hours	10 hours	High posterior head with no progress. High forcep del.
12	A.O'C.	I	1 fing.	18 hours	6 hours	2 hours	Patient was making very slow progress and 8hours after the first infiltration the patient was reinfiltrated.
13	" "		3 fing.	"	3 hours	None	
14	N.G.	II	2 fing.	10 hours	4 hours	None	
15	K.H.	I	2½ fing.	11 hours	4 hours	None	
16	M.McL.	I	2 fing.	12 hours	4 hours	None	
17	M.B.	II	3½ fing.	5 hours	1hr.50min.	None	
18	A.C.	I	1 fing.	14 hours	5½ hours	4 hours	
19	M.A.	II	3 fing.	6 hours.	1½ hours	None	
20	T.McC.	II	3 fing.	7 hours.	2½ hours	½ hour	

FIRST STAGE

		Para	Dilat. at Infilt.	Length of Labor	Duration of Analgesia	Pain returned & duration until delivery	
21	G.P.	I	1 fing.	15 hours	5 hours	3 hours	
22	J.K.	I	1½ fing.	5 hours	0	Constant	Was given a test of labor Delivered by Caesarean.
23	M.P.	III	4 fing.	6 hours	1½ hours	None	
24	O.K.	I	3½ fing.	14 hours	3 hours	None	
25	C.C.	I	3 fing.	16 hours	5 hours	None	
26	M.E.	III	2 fing.	8 hours	5½ hours	None	
27	A.W.	II	2 fing.	10hours	3 hours	3 hours	
28	M.G.	II	3½ fing.	6 hours	1½ hours	None	Premature
29	I.S.	II	3½ fing.	6 hours	1 hour	None	
30	M.S.	III	3 fing.	7 hours	1½ hours	None	
31	M.H.	VII	3 fing.	5 hours	1 hour	None	
32	R.W.	I	4 fing.	13hours	1½ hours	None	
33	M.W.	I	3 fing.	16hours	2 hours	2 hours	Persistent posterior head Mid. Forcep delivery.
34	I.C.	II	4 fing.	9 hours	1½ hours	None	
35	M.J.	III	2 fing.	6 hours	3½ hours	None	
36	D.K.	IV	3 fing.	6½ hours	1 hour	None	
37	M.T.	I	2½ fing.	12hours	4 hours	2hrs.25min.	
38	S.B.	III	2 fing.	8½ hours	2¾ hours	1 hour	
39	A.C.	IV	3 fing.	17hours	1hr.40min.	9hrs.20min.	Poor infiltration. After 3 hours of further labor patient reinfiltrated.
40	" "	"	3 fing.	" "	2½ hours	2 hours	

FIRST STAGE

		Para	Dilat. at Infilt.	Length of Labor	Duration of Analgesia	Pain returned & duration until delivery	
41	B.G.	I	2 fing.	17hours	4 hours	2½ hours	
42	M.K.	II	2 fing.	4 hours	3½ hours	None	
43	M.S.	V	2½fing.	8 hours	3 hours	1 hour	
44	J.F.	XV	2 fing.	5 hours	4 hours	None	
45	M.K.	I	2 fing.	9½hours	3 hours	1 hour	
46	M.D.	I	2 fing.	20hours	4 hours	12hours	Labor seemed to stop. Started again next A.M. and was reinfiltrated.
47	" "	"	3½fing.	" "	3hrs.45min	None	
48	M.McC.	IV	2 fing.	7½hours	2½hours	None	
49	F.M.	I	2 fing.	12½hrs	6 hours	None	
50	A.V.	IV	3 fing.	16hours	6 hours	None	
51	A.G.	I	2½fing.	12hours	3 hours	3 hours	
52	B.S.	II	2½fing.	6 hours	2 hours	None	
53	M.G.	I	1 fing.	21 hours	5 hours	4 hours	Having long protracted labor. Reinfiltrated 7 hours after first infiltration.
54	" "	"	3½fing.	" "	2 hours	1 hour	
55	W.H.	VI	2 fing.	2½hrs	1½ hrs.	None	
56	A.D.	I	2 fing.	5 hours	3½ hrs		Test of labor-- Caesarean done.
57	O.C.	IV	2 fing.	10 hours	3 hours	None	
58	J.C.	IV	3 fing.	10 hours	2 hours	None	
59	B.G.	I	2 fing.	12½hrs.	3 hours	None	
60	M.B.	VII	3 fing.	4 hours	1 hour	None	

FIRST STAGE

		Para	Dilat. at Infilt.	Length of Labor	Duration of Analgesia	Pain returned & duration until delivery	
61	P.M.	I	3 fing.	14½hrs.	3 hours	None	
62	M.C.	II	2 fing.	14 hours	4 hours	2 hours	
63	A.F.	VIII	2½fing.	12 hours	3 hours	None	
64	B.T.	II	3 fing.	8 hours	2 hours	None	
65	M.McM	I	2 fing.	10hours	3 hours	None	
66	D.McD.	I	1½fing.	25hours	5 hours	12 hours	
67	"	"	3 fing.	" "	3 hours	None	Reinfiltrated when pains resumed 9 hours later.
68	I.S.	X	2½fing.	9 hours	4½ hours	None	
69	D.H.	I	3½fing.	17 hours	3 hours	None	
70	R.W.	I	3 fing.	10 hours	3 hours	None	
71	E.N.	I	2 fing.	14 hours	3 hours	None	
72	A.X.	IV	2½fing.	8 hours	2 hours	None	
73	A.Y.	III	3 fing.	9½hours	2 hours	½ hour	
74	E.G.	VIII	3 fing.	14 hours	3 hours	½ hour	
75	M.J.	III	2 fing.	10 hours	None	None	Neurotic
76	C.F.	IV	3 fing.	4 hours	2½ hours	None	
77	M.C.	II	2 fing.	5 hours	2 hours	None	
78	I.P.	V	2½fing.	7 hours	3 hours	½ hour	
79	M.McL.	II	2 fing.	7 hours	½ hour	None	
80	I. O'N.	I	2 fing.	12 hours	3 hours	3 hours	

FIRST STAGE

		Para	Dilat. at Infilt	Length of Labor	Duration of Analgesia	Pain returned & duration until delivery	
81	L.T.	II	3 fing.	8 hours	2 hours	None	
82	L.McA.	I	3 fing.	10hours	3 hours	½ hour	
83	A.K.	VI	2 fing.	6 hours	2 hours	None	
84	E.B.	I	2 fing.	18hours	4 hours	2 hours	
85	A.F.	II	1 fing.	10hours	3 hours	1½ hours	
86	M.R.	VI	2 fing.	3 hours	1 hour	None	
87	E.J.	I	1 fing.	16hours	3½ hours	6½ hours	Patient had long labor. Reinfiltrated 6 hours after first infiltration
88	""	"	3½fing.	" "	3 hours	None	
89	J.C.	I	2½fing.	10hours	3 hours	1 hour	
90	I.B.	I	2 fing.	28hours	3 hours	8 hours	Persistent posterior head. Delivered by version.
91	M.C.	I	2 fing.	19hours	4½ hours	6½hours	
92	L.R.	III	2½fing.	8 hours	None	6 hours	
93	E.L.	II	3 fing.	10hours	2 hours	2 hours	
94	M.H.	IV	2½fing.	9 hours	3 hours	1 hour	
95	L.B.	II	3 fing.	11hours	None	5 hours	
96	L.M.	II	3½fing.	6 hours	2 hours	None	
97	E.C.	VI	3 fing.	4 hours	None	3 hours	
98	D.W.	II	2½fing.	16hours	3 hours	4 hours	
99	A.C.	I	3 fing.	16hours	3½ hours	2 hours	
100	G.V.	IV	2 fing.	6 hours	2½hours	None	

SECOND STAGE

		Para	Dilat. at Infilt	Time elapsed before delivery	Type of delivery	Perineal tear or Episiotomy	General Anaesth.	Puerperium	Remarks
1	M.F.	I	Fully	1½ hours	Low Forc.	None	None	Normal	
2	F.S.	I	Fully	1 hour	Normal	None	None	Normal	
3	C.S.	II	Fully	20 minutes	Normal	1°	None	Normal	
4	A.O'C.	I	Fully	1½ hours	Low Forc.	2°	None	Normal	
5	A.C.	IX	Fully	40 minutes	Normal	None	None	Normal	
6	F.McL.	I	3½fing.	1hour40 min.	Low Forc.	1°	None	Normal	
7	M.H.	II	Fully	1hour20 min.	Normal	None	None	Normal	
8	A.C.	I	Fully	1hour20 min.	Normal	None	None	Normal	
9	M.McL.	I	Fully	30 minutes	Normal	None	None	Normal	
10	C.O'N.	III	Fully	25 minutes	Normal	None	None	Normal	
11	E.G.	II	Fully	20 minutes	Normal	None	None	Normal	
12	M.C.	III	Fully	30 Minutes	Normal	None	None	Normal	
13	C.H.	I	Fully	1 hour	Normal	Lat. Right Episiotomy	None	Normal	
14	D.McL.	I	Fully.	2 hours	Normal	None	Ether	Normal	To hold head back
15	F.M.	I	4½fing.	2hours5 min.	Normal	None	None	Normal	
16	H.B.	VII	4fing.	25 minutes	Normal	None	None	Normal	
17	M.G.	I	Fully	1hour30 min.	Low Forc.	Lat. Right Episiotomy	None	Normal	
18	M.S.	V	Fully	20 minutes	Normal	None	None	Normal	
19	A.C.	IV	Fully	1hour30min.	Normal	None	None	Normal	
20	D.K.	IV	Fully	30 minutes	Normal	1°	None	Normal	

SECOND STAGE

		Para	Dilat. at Infilt.	Time elapsed before delivery	Type of delivery	Perineal tear of Episiotomy	General Anaesth	Puerperium	Remarks
21	M.J.	III	4fing.	2 hours	Normal	None	None	Normal	
22	I.M.	II	4fing.	1hour10min.	Normal	None	None	Normal	
23	B.W.	I	Fully	1hour30min.	Low Forc.	None	None	Normal	
24	A.R.	I	Fully	1 hour	Normal	1°	None	Normal	
25	M.R.	III	4fing.	1 hour	Normal	None	None	Normal	
26	K.R.	I	Fully	2hours40min.	Low Forc.	1°	Ether	Normal	Uterine inertia Apprehensive patient.
27	C.W.	II	Fully	1½ hours	Normal	2°	None	Normal	
28	E.M.	III	4fing.	1 hour	Normal	None	None	Normal	
29	K.D.	III	Fully	30 minutes	Normal	None	None	Normal	
30	C.O'B.	I	Fully	2 hours	Normal	None	None	Normal	
31	G.M.	VI	Fully	20 minutes	Normal	None	None	Normal	
32	B.C.	II	Fully	35 Minutes	Normal	None	None	Normal	
33	G.B.	I	Fully	1hour30min.	Normal	1°	Gas	Normal	Gas to repair tear
34	L.M.C.	I	Fully	1hour40min.	Normal	None	None	Normal	
35	S.R.	I	Fully	2 hours	Normal	None	None	Normal	
36	N.O'B.	I	Fully	2hours20min.	Low Forc.	Lat. Right Episiotomy	Gas	Normal	To repair Episiotomy
37	X	III	4fing.	1½ hours	Normal	None	None	Normal	
38	A.B.	II	Fully	1 hour	Normal	None	None	Normal	
39	A.R.	I	Fully	1½ hours	Low Forc	Right Lat. Episiotomy	Gas	Normal	For suturing
40	K.B.	IV	3½fing.	1 hour	Normal	None	None	Normal	

SECOND STAGE

		Para	Dilat. at Infilt.	Time elapsed before delivery	Type of delivery	Perineal tear of Episiotomy	General Anaesth.	Puerperium	Remarks
41	E.W.	II	4 fing.	½ hour	Normal	None	None	Normal	
42	L.W.	II	3½fing.	½ hour	Normal	None		Normal	
43	S.J.	IV	3 fing.	1 hour	Normal	None		Normal	
44	A.S.	I	Fully	1½hours	Normal	1°	None	Normal	
45	M.T.	I	Fully	1 hour	Normal	None	None	Normal	
46	S.P.	I	Fully	1½ hours	Low Forc.	None	None	Normal	
47	M.C.	II	4 fing.	½ hour	Normal	None	None	Normal	
48	R.M.	III	4 fing.	40 minutes	Normal	None	None	Normal	
49	L.H.	I	Fully	1 hour	Normal	None	None	Normal	
50	L.B.	II	3½fing.	1½ hours	Normal	2°	None	Normal	
51	H.R.	I	Fully	2 hours	Normal	None	None	Normal	
52	J.H.	IV	Fully	½ hour	Normal	None	None	Normal	
53	B.F.	II	Fully	½ hour	Normal	None	None	Normal	
54	M.C.	II	Fully	50 minutes	Normal	None	None	Normal	
55	R.O'H	III	Fully	20 minutes	Normal	None	None	Normal	
56	O.D.	II	Fully	1 hour	Normal	None	None	Normal	
57	M.M.	V	Fully	15 minutes	Normal	None	None	Normal	
58	G.D.	VII	3 fing.	1 hour	Normal	None	None	Normal	
59	L.R.	I	Fully	2 hours	Normal	1°	None	Normal	
60	B.A.	II	4 fing.	1hr.10min.	Normal	None	None	Normal	

above the symphysis, and the first lumbar over the symphysis and the third and fourth sacrals caring for an area in the back. Further the twelfth thoracic and the first lumbar have some union of branches to form the ilio-inguinal and ilio-hypogastric nerves. The areas of skin distribution of these two nerves may roughly be said to care for some of the skin over the symphysis as well as laterally corresponding to the inguinal ligament.[3]

Experimentally we were able to very clearly demonstrate that during the uterine contractions associated with labor, pain is very definitely and clearly referred to certain areas. When a patient was asked to try and point out where she felt the pain, she would sweep her hand over her abdomen from the fundus down to the symphysis and curving laterally along the inguinal ligaments. She also would place her hand over the small of her back. We then infiltrated, with novocain, a line of skin longitudinally from the fundus to the umbilicus. With the next contraction she said pain was felt only in the two lower quadrants but none at the fundus. We then infiltrated the right side and pain was only at the left. The left quadrant was then infiltrated and the patient declared herself to be free from abdominal pain but that the pain was still present in the back. We were thus able to demonstrate that there are three gross areas of the abdomen that are very definitely the sites of referred pain. We then proceeded to check our lines of infiltration experimentally. First taking the fundal line, we infiltrated the skin horizontally along the height of the fundus. Relief of pain was not as greatly in evidence as on the previous patient with longitudinal line of infiltration, whereupon, we infiltrated again, but this time longitudinally and relief was noticeably greater. We then infiltrated our second and third lines, i. e., in the two lower quadrants, vertically near the flanks and vertically nearer the mid line and at different angles but none gave as great an amount of relief from pain as did the curved lines conforming to the contour of the lower uterine segment and corresponding to the line of the inguinal ligaments. Thus we were able to show that experimentally the lines of infiltration which gave the best results are those which we will describe in further detail in the description of our technique. In addition to the lines of infiltration, comparative cases disclosed that subcutaneous infiltration was far inferior and very unsatisfactory as compared to intradermal infiltration.

The pain referred to the back proved to be the least successfully relieved by novocain. This we believe to be due to the fact that this pain is due in part to reference from the dilat-

SECOND STAGE

		Para	Dilat. at Infilt.	Time elapsed before delivery	Type of delivery	Perineal tear of Episiotomy	General Anaesth	Puerperium	Remarks
61	C.A.	II	3 fing.	1½ hours	Normal	None	Gas	Normal	Patient would not stop pushing
62	J.C.	IV	3 fing.	1 hr.25min.	Normal	None	None	Normal	
63	B.G.	I	Fully	2 hours	Normal	None	None	Normal	
64	D.S.	III	Fully	45 minutes	Normal	None	None	Normal	
65	M.B.	II	3½fing.	2hrs.10min.	Normal	2°	None	Normal	Reinfiltrated for suturing
66	S.H.	II	Fully	1½ hours	Normal	None	None	Normal	
67	M.D.	I	Fully	1hr.45 min.	Normal	None	None	Normal	
68	A.C.	IV	Fully	½ hour	Normal	None	None	Normal	
69	M.O'R.	V	Fully	15 minutes	Normal	None	None	Normal	
70	H.W.	I	Fully	1hr.55 min.	Low Forc.	None	None	Normal	
71	A.B.	III	3½fing.	45 minutes	Normal	None	None	Normal	
72	D.W.	I	Fully	2 hours	Normal	1°	None	Normal	
73	S.S.	II	Fully	1 hour	Normal	None	None	Normal	
74	C.P.	II	Fully	1hr.20 min.	Normal	None	None	Normal	
75	M.C.	I	Fully	1hr.50 min.	Normal	Rt. Lat: Episiotomy	Gas	Normal	For suturing
76	A.O.	III	Fully	1 hour	Normal	None	None	Normal	
77	M.F.	II	Fully	1½ hours	Normal	None	None	Normal	
78	S.D.	IV	3½fing.	1hr.25 min.	Normal	None	None	Normal	
79	D.A.	VI	3 fing.	2 hours	Normal	None	None	Normal	
80	C.C.	III	Fully	20 minutes	Normal	None	None	Normal	

ing cervix and in part from pressure on the sacral plexus by the descending parts. Infiltration therefore would give only partial relief.

TECHNIQUE OF FIRST STAGE INFILTRATION

There are three areas used for infiltration. First, a longitudinal area, or more truly, a line which extends almost from the height of the fundus down to just above the umbilicus. This varies in length from four to six inches, varying with the size of the individual abdomen. The second, on the right side, starts about an inch medial to the anterior superior spine and, conforming to the contour of the uterine corpus and overlying the inguinal ligament, curves medially and down, terminating in the mid line over the symphysis. The third is a similar line on the other side meeting the end of the previous line. These latter lines as they approach the symphysis should run along its superior margin.

These areas are cleansed with soap and water and then painted with 2% or 4% mercurochrome. A sterile hypodermic needle with sterile syringe and sterile 2% novocain are then used.

Before starting the actual infiltration a small area of skin is injected *intradermally* to ascertain, if present, any idiosyncracy on the part of the patient to novocain. If no reaction is noted, the infiltration may then be carried out. The important features are *intradermal injection and the proper lines of infiltration.* Starting at the site of test infiltration, which was made somewhat below the height of the fundus in the mid line, the intradermal injection is carried out, occasionally allowing a little of the novocain to go subcutaneously. The needle is carried through novocainized skin only, so that the only needle pricks of which the patient is aware, are the initial insertions. When this has been finished, the above described areas are infiltrated, care being taken that the injection, in the main, be intradermal. When completed the areas should stand out as raised lines with multiple points along them. If the patient still complains of abdominal pain, the areas of infiltration should be investigated and made certain to be correct.

The use of a local anaesthetic for second stage of labor has been employed in various forms and methods for some time. The first attempt was made by Stiassny,[4] shortly after the advent of cocaine, who applied cocaine directly to the mucosa of the vagina and vulva. This is today only of historical value. The more lasting and valuable methods were, notably: the blocking off of the pudic nerve, as recommended by Ilmer,[5] and employed and reported later by King;[6] the parasacral infiltration of Braun;[7] and the transsacral of Meeker[8] and his associates. These methods, although satisfactory when properly employed, are rather complicated and less satisfactory when applied to general use or by one who has not been trained in the details. Still more recently epidural and spinal anaesthesias have been successfully used. Gellhorn has reported the use of infiltration locally into the regional structures, as successful and wholly satisfactory. In general his technique was that followed in the infiltration for perineorrhaphy.[9]

The pain of the second stage labor may be said to be due to pressure of the descending fetus upon the sacral plexus, and the direct action of the presenting part on the perineal floor and the soft tissues of the outlet. Anatomically it is the stretching of the levators, the transverse perinei, the sphincter ani, the constrictor vaginae, hymeneal ring, the labia, and skin. Infiltration of these parts not only serves to allay the pain, but secondarily, by allaying the pain stimulus from these structures, they seem to become less resistant, lose their tenseness and rigidity, and consequently are more easily dilatable, thus shortening the length of second stage labor. Due to this same factor the tendency to tearing is somewhat lessened.

Indications: pulmonary tuberculosis, acute and chronic bronchitis, emphysema, especially in elderly or debilitated women, arteriosclerosis, and certain cardiac conditions. Generally wherever there may be a contra-indication to the use of an inhalation narcosis.

Contra-indications are essentially only two. First and most important is the idiosyncracy to novocain, and second, a highly neurotic, and utterly intractable patient.

TECHNIQUE OF SECOND STAGE INFILTRATION

The time of election for infiltration is, in the primipara, when the os is fully dilated and the cervix completely taken up; in the multipara the same, or when there is still a slight rim of cervix left.

Following the routine mercurochrome preparation, using sterile 2% novocain, a sterile intra-muscular needle and syringe, and wearing sterile gloves, the infiltration is started at about the mid point of the hymeneal ring and is carried inward and down until the labium has been traversed and the fourchette has been reached. The same procedure is then carried out on the other side. Then the needle is carried through the infiltrated area into the deeper tissues, care being taken to include the levators. The infiltration is then carried outward and down, including the skin about the fourchette and between the anus and vagina. Finally the perineal body and the floor of the vagina are infiltrated. Thus we have infiltrated the levators, the perinei muscles, skin, and mucous membrane of the lower vulva. It is rarely necessary to include any of the anterior wall in the infiltration as very little, if any, pain is complained of in that area. Care must be taken to well infiltrate the skin between the anus and vagina, as well

as laterally, in the event of a tear or an episiotomy to repair. The infiltration is made slowly and carefully so as to avoid producing an area of subcutaneous edema, as an area of edema may be conducive to tearing, whereas with proper infiltration the tendency to tear will be decreased.

If a tear or episiotomy is obtained, the repair may generally be made without recourse to any general anaesthesia. If the patient complains of discomfort at this procedure, additional infiltration into the tissues which are to be sutured may be done, or if desired it may be done under gas-oxygen anaesthesia.

DISCUSSION OF CASES

We have obtained 100 cases of first stage infiltration for consideration. These cases, with a few exceptions, were performed at the clinic. The exceptions were done by the writer in private practice. The cases were not selected but done as time and circumstances permitted. In the accompanying charts it will be noted that the amount of dilatation at the time of infiltration has been notated, and the average dilatation is from two to three fingers. The 100 cases consist of 43 primiparas and 57 multiparas.

Of the 100 cases there were 6 who had little or no relief. This includes those cases who had less than the low average of two hours of analgesia, exclusive of those cases who delivered within two hours of the time of infiltration. Let us consider these six cases.

No. 22 This patient was given a test of labor and was subsequently delivered by Caesarean section. No analgesia obtained.

No. 39 Following infiltration only slight relief was obtained. Investigation disclosed faulty infiltration.

No. 75 Here we dealt with a highly neurotic individual who bore pain very badly and who said she obtained no relief.

Nos. 92, 95 and 97 had absolutely no result from the infiltration. These three cases demonstrated no satisfactory reason for not obtaining any relief. They were not neurotics, and the lines and technique of infiltration were apparently correct. No adequate explanation for these poor results can be given.

It will be noted that several cases of long labor had, by means of a secondary infiltration, a total of 7-9 hours of analgesia.

From these charted results it will be seen that 94% of all the cases had complete relief of abdominal pain of varying lengths of time, all for at least 2 hours.

There were 292 hours of analgesia obtained in the 100 cases, so, we have an average of practically 3 hours of analgesia; actually it is 2 hours and 54 minutes.

There was not a single case of idiosyncracy to novocain nor were there any cases of skin infection or sepsis.

It must be remembered that all these results refer to cases that had only skin infiltration of the abdomen. There were no other medications or anaesthetics employed. It must also be kept in mind that this infiltration does not attempt to relieve any of the back pain that is concomitant with the progress of labor. This, as we have indicated before, is due, not only to the stretching of the cervix but also to direct pressure on the sacral plexus, and, although infiltration will inhibit the skin reflexes, it can have no effect upon the plexus itself, which, in this particular case, is the seat of difficulty.

The accompanying charts of the second stage are self explanatory. It will be seen that there were 31 primiparas and 49 multiparas. Of the 80 cases there were 69 normal deliveries and 11 instrumental. There were 5 episiotomies and 13 tears of the perineum. Additional anaesthesia was necessary in 8 cases. Of these cases 5 were given additional anaesthesia because of repairing tears or episiotomies, although 13 cases with tears or episiotomies were repaired without recourse to a general anaesthetic, and the remaining 3 cases had general anaesthesia because of pain or lack of co-öperation on the part of the patient.

As a rule the patient is decidedly co-öperative. She complains of no pain, merely a sense of pressure and a feeling that something wants to come out. The absence of pain however is decided and emphatic. It allows the patient to push when required and relax when requested.

Perineal infiltration may be used even if gas-oxygen is to be employed. It will help keep the patient more comfortable, less gas-oxygen is necessary and second stage shortened.

It is to be remembered that this method is by no means new or unheard of, but in this particular locality it has been neglected and overlooked as one of the means of making the second stage of labor easier and more endurable for the patient and incidentally for the doctor and attendants. Because it has been neglected, these cases are published and it is hoped that this paper will be instrumental in bringing before us a means of alleviating the pains of labor, which, in its place, is valuable, safe and highly successful. We do not intend to give the impression that this procedure should be made a routine of each and every delivery, but, there are numerous occasions when gas-oxygen is unavailable and the physician does not care for epidural or spinal anaesthesia, when this method can be relied upon to produce the required results. It is also desirable to use when a general inhalation narcosis is contraindicated. There is no excuse, in this day and age, for allowing any patient to deliver herself without some anaesthesia or form of analgesia. The laboring mother is certainly entitled to whatever comfort and aid we may be able to extend, and those

physicians who can, but do not, help to relieve the pains of labor are certainly in a position to be criticized.

In the first stage of labor the use of novocain intradermally is an original application of our modern conception of viscero-sensory pain and an original experiment in its results and value. We do not claim it to be a panacea for the pain of the first stage of labor, but we do most strongly point out that this should, and does, produce considerable relief. There are many physicians to whom this may be a decided attraction because of their individual objections to the other tried and well known analgesics. The feeling of many against morphia during labor is decidedly strong, as is also the aversion to scopolamine and the synergistic analgesia of Gwathmey. More recently pantopon in a dose of gr. 1/3 has been advocated to replace morphia because of its claimed less absorptive and harmful effect upon the baby. The writer has employed pantopon in combination with the intradermal infiltration, with a definite prolongation of the analgesia; especially its effect upon the back pain is of value.

CONCLUSIONS

1) That intradermal infiltration of definite areas of the abdomen produces decided relief and absence of pain during first stage labor.

2) That this analgesia has an average duration of three hours.

3) The method of employment is simple and safe.

4) That it has no harmful effects upon mother and baby as contrasted to the occasional effect of morphia, scopolamine and rectal analgesias and anaesthesias.

5) That perineal infiltration during the second stage of labor is a decidedly valuable procedure.

6) That it may be used in place of, or as an adjunct to, gas-oxygen inhalation during second stage labor.

7) That it may be employed both in the hospital and in the home.

8) That with proper asepsis and technique it is not harmful or dangerous.

9) That it should be employed more generally as a valuable adjunct in the armamentarium of the obstetrician or general practitioners doing obstetrics.

In conclusion the writer wishes to extend sincere thanks and appreciation to the Visiting and House Staffs for their assistance in making this report possible.

REFERENCES

1 Mackenzie, J.: Symptoms and Their Interpretations. 2nd ed. London, Shaw and Sons, 1912, pages 32-62.
2 Weiss, S., and Davis, D.: Amer. Jour. Med. Sciences, 1928, 176: 517-536.
3 Cunningham, D. J.: Anatomy, 5th ed., Wm. Wood & Co., 1921, page 1321.
4 Stiassny, S.: Schmerzlinderung bei normalen Geburten. Samml. klin. Vortr., 1910, No. 590-591, Gynäk., No. 212-213, 461-519.
5 Ilmer, W.: Zentralbl. f. Gynäk., 1910, 14:699-702.
6 King, R. W.: Jour. Surg. Gynec. and Obst., 1916, 23:615-618.
7 Braun, H.: Oertliche Betaeubung, 5th ed., 1919, pp. 375-380.
8 Meeker, W. R. (et al.): Jour. Surg. Gynec. and Obst., 1923, 37:816-840.
9 Gellhorn, G.: Jour. Surg. Gynec. and Obst., 1927, 45:105-109.

AMOS TWITCHELL 1781-1850

BY CHARLES F. PAINTER, M.D.†

PIONEERING in the practice of surgery was far less common in Colonial times and the early part of the 19th. century than it was in the case of internal medicine. In the activities of the subject of this sketch we have a glimpse of the difficulties attendant upon the practice of surgery. In rural New England at this period there were no Hospitals where facilities were to be had for the performance of surgical operations. There were no trained assistants, no nurses and knowledge of sterilization of sutures, ligatures and dressings not to mention the hands and instruments, was not possessed. It was quite a different matter to undertake operative work in the surroundings provided by an ordinary dwelling house, and with none of the equipment which we have today. Many of the problems of surgery had to be solved de novo, without knowledge of the experience of other surgeons when confronted by the same situations. Surgeons did not rush into print so quickly after doing even an unusual operation and means of communication were so slow that it took a long time for printed reports to get about. Hearsay might by chance supply the means of diffusion of knowledge but how imperfectly, is well known. The outstanding factor that signalized the careers of the pioneers of medicine in New England, as elsewhere, was their personal character. Fewer men felt the call to enter the profession and in fact there could scarcely be but one compelling motive. There was no way to avoid the arduousness of the calling on the one hand and there were no methods of exploiting one self or one's skill which gave promise of anything but the most meagre financial return, on the other. When a young man went into medicine in those days it was a logical deduction that he *was* a man of character. Experience has taught us that character is of paramount importance in the selection of men for matriculation in our medical schools and that we *must* know "what manner of men they are". Perhaps, indeed, it would be expedient to go

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†For record and address of author see "This Week's Issue," page 146.

back a generation or two with investigations of this nature.

Amos Twitchell was born in Dublin, New Hampshire on the fourteenth of April, 1781. On his father's side there is but little information to be had. Indeed it was to his maternal ancestry, and particularly to his mother, that Twitchell made acknowledgment of his indebtedness. His paternal grandfather was Capt. Joseph Twitchell, who lived in Sherburn, Mass., where he was born in 1719. He died in this same town in 1793. Amos Twitchell's father, Samuel, was also born in Sherburn in 1740 but became one of the earliest settlers in Dublin, New Hampshire. There were only twelve families there when he took up his residence. It was here that he died in 1820, long after his son had achieved his reputation. He was a farmer but as a side issue conducted a mill where he ground the corn for other farmers in the neighborhood. Though a man of little education he seems to have been interested in books and to have had the confidence of his fellow townsmen, for he was their representative in the legislature at one time and while there, was instrumental in securing a charter for the library of that town and was chosen, later on, as chairman of a committee to purchase books for that institution. He was for a time a magistrate and during the Revolutionary War was in command of a company of the militia. It was said of him that he had not an enemy in the world. A Calvanist in religion, he became somewhat too liberal, as he grew older, to suit the orthodox clergy of the time. His mother was a lineal descendant of the Rev. John Wilson whom Cotton Mather described in the Magnalia as the "father of the infant colonies of New England," he having arrived from England in 1630. A regular succession of clergymen descended from him in unbroken line until the maternal grandfather of Amos Twitchell broke the family tradition by entering the medical, instead of the clerical profession. He practiced in Sherburn but death claimed him early and he left a widow and a daughter Alice, who became the wife of Samuel Twitchell in 1766. Of this union were born nine children of whom Amos was the seventh.

His mother appears to have been a woman of strong personality, orthodox in her religious beliefs though, withal, sufficiently liberal in her way of thinking to have informed her pastor that she would not teach the Westminster catechism to her children as it contained many statements which she did not believe. She was in demand in the neighborhood because of her practical sense as a nurse and in spite of her own home cares and responsibilities found time to answer these demands. As might be supposed she had but little time for reading, of which she was very fond, but her son, Amos, made it his business to supply this lack by reading aloud to her at every opportunity. She seems to have sensed the fact that of all the family he was the one for whom every sacrifice should be made to provide a college training and to this end she bent her every energy. Scarcity of ready money made the problem of sending a son away to college a difficult one and Amos's father was anxious to keep his sons at home on the farm. One or two experiences however convinced him that he should accede to his boy's expressed desire to secure a liberal education. Having been sent to the mill to grind a neighbor's corn he became so interested in the book he was reading that he failed to note the completion of the process, with the result that the mill stones were ruined. It was this incident which convinced his father that it was not economy to continue him in the line of his own business.

To those of you who have faith in the influence of physical environment upon the development of an individual and who are acquainted with the natural surroundings of Dublin, New Hampshire, it will be comparatively easy to believe that to these, in no uncertain measure, may be attributed some of the basic characteristics of Amos Twitchell's character. At any rate he acquired there a rugged constitution as well as a rugged character and when, the day after the occurrence of the incident to which reference is above made, his father became convinced that he should be allowed to seek his fortune in other fields, he tied up his belongings in a handkerchief and set out for New Ipswich where he entered the Academy, coming under the influence of the Rev. Samuel Worcester. He remained there about eight months and then for a time was under the tutelage of the Rev. Mr. Palmer of Townsend where his preparation for College was completed. In the Academy he was a great favorite and was looked up to for both his physical and mental prowess. His mind was one that projected itself to the root of a matter; particularly in mathematics did he reveal this capacity. He was possessed of a jovial disposition and was a prime favorite among his school fellows because of his social qualities In August, 1798 when he was seventeen years of age, he set out on horse back from Dublin to make application for admission to Harvard College and right here took place one of those occurrences which so well illustrate the fallibility of tests which the wisdom of educators contrive, to determine the qualifications of mind deemed desirable for admission to the Sanctuaries of learning. Twitchell had not read enough of the prescribed literature to justify his admission and he was told to go elsewhere, so he turned his horse's head north-westward and secured admission to Dartmouth, a younger institution, and therefore perhaps not so fussy as to the standards it had set up for recognition, or perchance she was more discriminating as to what values were really of the greatest importance when offered by a candidate for matriculation. However

that may have been one cannot escape the conclusion that it was fortunate for Twitchell that he had *not* read what Harvard required for her he failed to enter the College at Hanover he would have missed at least one influence that could scarcely have been duplicated, in those days at least, at Cambridge, the association with a man like Dr. Nathan Smith, an association that meant so much to him all his life. There were at Hanover at that time a number of remarkable men and if *physical* environment may be credited with an influence upon the shaping of character certainly association with rugged *intellectual* capacity must have had its moulding influence as well.

Besides Nathan Smith he found there Dr. Wheelock, the President of the College, Daniel Webster, James Dean, a professor of mathematics for many years thereafter, Drs. Mussey of Cincinnati and Shattuck of Boston. He lived on terms of intimate intellectual companionship with these men and gave no less than he received, according to the testimony of some of them. He was a practical joker here as he had been at school but never in a malicious way and though he sometimes "skated on rather thin ice" he was never in disgrace during his college career. His lack of funds compelled him to teach during the winter months in order to meet his college expenses and this he did at Dublin, Marlborough and other nearby towns. He was distinguished for his industry and application while in college and was rewarded for the same by securing a place on the commencement program through the merits of a Greek oration which, though probably not very good Greek, reflected the philosophic trend of his mind. It was in mathematics and the classics that he stood out most conspicuously. Perhaps citation of Twitchell's preparation for the study of medicine cannot be noted as evidence that these subjects afford a *better* preparation for the study of medicine than what is now demanded (perhaps indeed conditions are so different, there is no logic in offering any comparisons) but at least it may be said they *may* furnish a perfectly sound intellectual discipline and far better cultural background than much of that which is now required. Twitchell graduated from Dartmouth in 1802 and had apparently fully made up his mind before that date that it was into medicine he desired to go. Doubtless this determination, present as it was so long before he entered college, received great impetus through his association with Dr. Nathan Smith, to whom he became apprenticed the very year he received his diploma at Hanover.

The acquisition of the knowledge, now obtained in the laboratories and clinics of a medical school by the apprentice methods especially when bound to a teacher of the type of Nathan Smith, who was engaged at the time in building up the medical school, and at a time when respect for the human body made it practically impossible to procure subjects for dissection in a legitimate way, was in some respect a thrilling experience. It was all of that in the case of Twitchell's association with Dr. Smith. The procurement of material for dissection for the class in anatomy at Dartmouth made it necessary to resort to methods which had been, and still were, employed wherever medicine was taught and Dr. Henry I. Bowditch, who wrote the best memoir of Dr. Twitchell that we have, devotes a good deal of space to a defense of those methods. The manner in which he does it however very clearly indicates that his own conversion to the view he was advocating had only recently been made and at the cost of much perturbation of mind. For two years Twitchell did practically all the "body snatching" that was necessary in the conduct of Smith's course. It called for courage, resourcefulness and strength, all of which he possessed, and to his store of which he undoubtedly added during his apprenticeship. His own opportunities for dissection moreover were greatly increased by these expeditions. These were qualities which in his own surgical practice in later years he so conspicuously demonstrated.

In procuring bodies it was not uncommon for him to travel a hundred miles and many times he had narrow escapes from being caught, a result of which might very well have been the administration of a very summary kind of punishment, for though there were laws which by their severity were designed to check such practices, public feeling ran high at times and the chances were that friends of the deceased would prefer not to wait on the slow and uncertain machinery of the law. Legislation recognizing the legitimacy of human dissection and providing a legal means of procuring material for this purpose was first enacted in an Anglo-Saxon country, in the State of Massachusetts, in 1831, one year before the same legislation was passed by an English parliament. At the time Dr. Bowditch* wrote his memoir of Dr. Twitchell in 1851, the State of New Hampshire had no legislation on its Statute books covering this matter. Dr. Nathan Smith himself, when he severed his connection with the Dartmouth Medical School in 1813 and went to New Haven, did so, it is thought, very largely as a matter of expediency because of the feeling which his well known activities along this line had generated among the population of northern New Hampshire and Vermont.

At the Dartmouth Commencement of 1805 Twitchell took his degrees of A.M. and M.B. for which he hesitated about going after on account of the expense. Indeed it was only upon assurances from the President and Dr. Nathan Smith that the fees which would be due them must not stand in his way, that he decided to

*Memoir of Amos Twitchell. 1851. By Dr. H. I. Bowditch.

present himself. He had incurred so much indebtedness, all of it however to his brother-in-law, Dr. Carter, that he shrank from getting in any deeper. In his correspondence from time to time on financial matters with Dr. Carter such sums as six and eight and twelve dollars were referred to as amounts, the procurement of which presented insuperable obstacles. His success in later life must have made him look back upon these periods of financial depression in his student days with amusement.

After his graduation, upon Dr. Smith's advice, he went across the river from Hanover and settled in Norwich, Vt., where he remained about two years. There were evidently more physicians there than the size of the community required, practice was slow in coming and he must have been conscious of his own superior equipment, but more than all, he was faced with the burden of debt which he saw no immediate possibility of discharging. He was, moreover, a vigorous, virile man who for several years had worked with tremendous energy at congenial, though hard tasks, knowing that in their accomplishment he was adding to his equipment. Suddenly to be confronted with inactivity developed in him a degree of despondency requiring all of Nathan Smith's skill and tact to overcome. He seems to have suffered from what a present day psychologist would diagnose as an "inferiority complex." Under Dr. Smith's management which consisted in taking him off with him on a three day trip during which time he so entertained him with accounts of his cases, surgical operations, local gossip, stories and an afternoon's sport at shooting turkeys, at the end of which he had him prepare a concoction that he had been accustomed to make in the chemical laboratory during his apprenticeship and show his students how to make it, that he suddenly realized what Smith was really up to and became so ashamed of himself that he "snapped out" of his depression at once and for all. Shortly after this he removed to Marlborough where he went into partnership with his brother-in-law with the understanding that he was to devote most of his time to surgery. At about this period occurred an opportunity for him to display the qualities which he had been for so many years developing and to exhibit the skill which his anatomical training with Dr. Nathan Smith had prepared him to exhibit. It is best described in his own words.

*1807 Operation. Address Before the New Hampshire Medical Society

"Gentlemen

Permit me to repeat to you a case, the circumstances of which were very interesting to me at the time and subsequent events have rendered them still more so.

October 4th, 1807, at a Regimental review in Temple in this State John Taggart of Sharon aged twenty years, a Soldier belonging to a company of cavalry received, during a mock fight, a wound, supposed to be from the discharge of a Pistol, so near him that the wadding and burning powder struck him upon the right side of the neck and face passing from behind obliquely forward into the mouth.

He was immediately conveyed to a public house where at the request of Dr. Granbie, then Surgeon of the Regiment, I assisted in the examination and dressing of the wound and subsequently took charge of the case. We found the whole of the right side of the face, head and neck very much burned, and a large wound penetrating the Pharynx and mouth in the course of which were destroyed and much lacerated, nearly the whole of the Parotid Gland, the temporal, masseter and pterygoid Muscles; likewise some of the muscles on the anterior part of the neck between the lower jaw and the os hyoides. The angle, ascending ramus and coronoid process of the lower jaw and the Pterygoid process of the sphenoid were shattered and that portion of the superior maxillary bone which covers the antrum Highmoranum, was so broken that the finger could be readily passed into the sinus and vicinity and the right side of the tongue was somewhat lacerated. The Hemorrhage was not very great at the time of the injury although the external carotid artery and its branches were divided. After removing all the fragments of bone which were so detached that we could extract them without much difficulty, simple dressings were applied to the wound, an anodyne draught administered and the patient put to bed.

The next morning, October 9th he had rested but little, there was a good deal of arterial excitement with so much inflammation and swelling in the throat and fauces that he was unable to swallow anything or to articulate so as to be understood, his respiration was somewhat impeded, his face very much swollen and was attended with great pain in the head. He was bled from the arm twenty ounces, an evaporating lotion applied to the face and head and a cathartic enema administered which procured two or three evacuations. These remedies appeared to give him some relief for a few hours, but in the evening the excitement and pain increased, ten or twelve ounces more of blood was taken, the evaporating lotion continued upon the face and an emolient poultice applied to the wound.

October 10. The pain was less, he had rested and slept some during the night and his face was not so much swollen and with much difficulty he swallowed a little cold water, tho' in the attempt some portion of it escaped through the wound. There had been a good deal of bloody, serous discharge from the wound externally and through the mouth. The same local applications were directed to be continued

*This is a copy of the manuscript of the author now in the possession of the Boston Medical Library.

as before prescribed, and a little gruel to be given when he could swallow it and a spoonfull of the solution of Borax to be put into his mouth every half hour. In the afternoon he was removed home to his father's house in Sharon, the distance of Eight or nine miles, without producing any unfavorable symptoms, he was directed to be purged with Epsom salts as soon as practicable.

October 12. The inflammation and swelling had considerably abated and he could articulate more distinctly. Suppuration had commenced and the deadened parts were beginning to separate, the posterior tooth of that side of the upper jaw appeared in the wound and was removed. Deglutination was much better although in every attempt to swallow any liquid a portion of it escaped through the wound. He had taken sulphate of magnesia sufficient to procure three or four alvine discharges, the pain in the head and the febrile action had principally subsided, his pulse was from 70 to 80 in a minute and soft. The emolient poultices were continued and he was allowed a little broth.

Oct. 14. Suppuration was copious, some portion of the deadened parts had become detached and were removed and some fragments of bone came away.

Oct. 16. Since last date the disorganized parts had separated very much, all of the ascending ramus of the lower jaw, excepting the condyle (in pencil) the coronoid process, the angle of the jaw as far forward as to the posterior tooth now being removed, he could sleep gently and take as much food as was necessary. Discontinued the poultice and applied simple cerate upon pledgets of lint.

Oct. 18. In the afternoon ten days from the time of receiving the injury the wound had become clear of all the dead portions of muscles, and cellular membranes leaving a large open, circular wound between two and three inches in diameter in the bottom of which could be distinctly seen the internal carotid artery denuded from near the bifurcation of the common trunk to where it forms a curve to enter the canal in the petrous apophysis of the temporal bone. Directly upon this curve of the artery could be seen a dark speck of a line or two in diameter which appeared like a dead portion of cellular membrane adhering to the coat of the vessel. I carefully touched it with a probe, found that it adhered and desisted from attempting to remove it and expressed to the patient and his friends the fears I had of a dangerous, if not fatal, hemorrhage when that should separate. I applied the usual dressings, left the room and was about leaving the house when some one of the family cried out that he was bleeding. I hastened back to his room found him deluged with blood, the dressings were immediately removed when the blood jetted forcibly in a large stream to the distance of three or four feet. I instantly applied the thumb of my left hand to the bleeding artery and pressed it forcibly against the base of the skull which entirely stopped the Hemorrhage. The patient fainted and it was fifteen or twenty minutes before he was so much revived that I dared to make any attempt to secure the artery, then, still keeping the thumb firmly upon the orifice of the bleeding vessel, with the assistance of the mother of the patient I proceeded to clear the wound of blood, when this was fullv accomplished I called for a scalpel and made an incision downward along the course of the carotid artery, having but one hand at liberty to operate with I depended upon the old Lady to assist me in retracting the sides of the wound with a hook and occasionally with her fingers I carried the incision more than an inch below where the external carotid was shot off, which as before stated was entirely destroyed by the first injury. Thus partly by careful dissection with the knife and partly by the use of my fingers and the handle of the scalpel I at length succeeded in separating the artery from its attachments and forcing my fingers under it raised it up sufficiently for my assistant to pass a ligature round it, about half an inch below the bifurcation, which she tied with a surgeon's knot as directed. I then sponged away the blood and removed my thumb from the wounded vessel not doubting but that the bleeding was effectually stopped but to my surprise the blood began immediately to ooze out of the rupture in the artery and within ten minutes it flowed with a pulsating jet. I compressed it again with my thumb and with feelings of extreme disappointment began to despair of saving my patient. What further could I do? It was impossible to apply a ligature above the bleeding orifice. Compression then was the only alternative. How was that to be affected? Should some person sit by the patient and constantly compress the vessel with his fingers till adhesion took place? Possibly that course might be accomplished but we concluded to make our other attempts first. I called for a small piece of dry sponge and raising my thumb placed it immediately upon the wounded artery and renewed the compression. I then called for a little larger piece of sponge and placed it upon the first and so went on gradually enlarging the pieces and placing them one upon another and pressing them at the same time obliquely upward and backward toward the base of the skull till I had filled the whole wound with a cone of sponge the apex of which was upon the wound of the artery, the base extending some two or three inches external to the outer surface of the wound. I then applied a linen roller in a manner to press firmly upon the sponge by passing it in repeated times over the head and face—about the neck. The patient was then placed in bed with his head moderately raised upon a pillow and directed to be kept as still and quiet as

possible and as his pulse was very feeble having lost at that time by estimation between three or four pounds of blood, he was allowed to take a little wine and water and occasionally some broth. We carefully watched him through the night, no bleeding occurred and he complained of but little pain. Oct. 20. Forty-eight hours after the operation there was no hemorrhage and but little external pulse, about eighty-five and regular. Directed to give him gruel and broth and a little wine and water if faint. This course was pursued till October 24th when the bandage was carefully removed and a fresh one applied without disturbing the sponge. October 26 the fetor deriving from the accumulation of matter in the sponge had become so offensive as to nauseate the patient himself. We carefully removed several of the external pieces and washed the wound with a weak solution of Carbonate of Potass, and supplied the place of the sponge removed with lint and applied the compressing bandage as before. October 28. All the sponge was removed except the small piece directly upon the artery, the sore was washed with a weak alkaline lotion and pledgets of lint spread with simple cerate were applied. Oct. 30 the ligature upon the carotid artery came away and the wound was filling up rapidly with granulations.

Nov. 1. The remaining portion of sponge was removed and he attempted for the first time since receiving his wound to masticate his food. His under jaw was drawn so much to the left that his teeth would not correctly meet. To remedy this inconveniencing deformity we got an ingenous blacksmith in the neighborhood to make an instrument something in the fashion of Hall's Trusses, one end of which was fitted to the top of the head and then brought down upon the right side and under the jaw and turning up with a pad on the other end so as to prop against the left side of the Chin. This instrument he wore most of the time during the remaining part of the cure and it effectually answered the purpose of preventing the jaw from being drawn to the left. From last date to November eleventh he improved rapidly, several pieces of bone and one tooth from the lower jaw had passed out of the wound which was now cicatrising fast. There was but little discharge of matter and he was able move his lower jaw and masticate solid food with considerable freedom.

Dec. 30. Some small pieces of bone and another tooth from the upper jaw had come away and the wound was completely cicatrised and the parts consolidated although there was some deformity in consequence of considerable depression remaining upon that side of the jaw.

This case I considered at the time highly important and valuable in a practical point of view, as establishing some surgical facts, which as far as my knowledge extended had hitherto been unsupported. The practicability of the safe application of a ligature to the common carotid was in my mind now settled. I had for some time previous been of that opinion having repeatedly tied the carotids of dogs and in one instance of a horse without their suffering any inconvenience, yet at that time I had seen no account of its ever having been attempted upon the human subject.

Sir Astley Cooper's claim of priority in the successful application of a ligature to the carotid artery has generally been acknowledged; he performed the operation in June 1808. Eight months subsequent to the preceding case. Mr. Cooper's case was undoubtedly the first published and it appears from more recent publications, that a Mr. Flemming, a surgeon in the British Navy tied the carotid October 17, 1803 for a servant on board ship who had attempted to commit suicide. The patient recovered. Mr. Flemming died abroad and the case was first published by his assistant surgeon Doctor Coley in 1817."

Twitchell had thought about the effects of ligature of the common carotid and had tied it in large animals but was uncertain as to whether it could be done with impunity in the human subject. Suddenly and unexpectedly, opportunity to see for himself arose. It had been a moot question for many years as to whether the brain could be nourished if either of the carotids were ligated. Indeed the very word carotid is derived from the Greek *karow*, meaning to cause to sleep, and reflected the opinion of early physicians who had observed that injury to the blood supply of the brain caused the lower animals to pass into a comatose state from which they frequently never came back. Interest had further centered in the subject because aneurisms of the arteries of the leg had been cured by ligation without sacrificing the limb and very naturally, were it not for the uncertainty of what might happen to the brain if its circulation were cut off, the same procedure might be expected to offer promise of cure in cases of carotid aneurism.[1a] A German surgeon, Hebenstreit,[2] seems to have been the first to have mentioned a successful case This was in a German translation of Benj. Bell's surgery. Twitchell could not have known of this. Abernethy, in 1804, had a case where the smaller branches of the carotid had been damaged. He tied these off but as the bleeding was not controlled he ligated the carotid. The man died and it was said that his brain was affected. In 1803 Flemming,[3] an English naval surgeon, saved the life of a man who had divided his carotid in an attempt at suicide. He did not publish this until 1817. Dr. Cogswell,[4] in Connecticut in 1803, in attempting to remove a tumor of the neck cut and tied the carotid but the patient died. The account of this was not published for many years. In November, 1805 Sir Astley Cooper[5] operated for an aneurism of the carotid and though he lost the patient he did not give up

hope of being able to perform it successfully under more favorable conditions. His next opportunity did not arise for three years and in this he was brilliantly successful. This however was a year later than Twitchell's successful case. Cooper published the account of this operation in 1809. It would appear from all we can learn that as much credit belongs to Twitchell as to anyone for having ventured to do so hazardous an operation, for the cases that he might have known about were, so far as they went, confirmatory of the opinion the profession had long held. Even could it be shown that he could have known of the successful cases that had been done, (and we have his word for it that he did not) he should receive equal credit, for the attendant circumstances would have tried the courage and tested the resourcefulness of a Cooper or an Abernethy.[6]

In 1810 when he was 29 years old he removed to Keene, N. H., for here he thought he saw a greater opportunity to practice the surgical side of his profession. He lived here during the remainder of the years of his practice, about forty, and was generally recognized in this Section as the head of the profession. He was widely known throughout the States. In 1811 Twitchell joined the New Hampshire State Medical Society and all through his life kept up an active interest in it, acting as Censor, Counsellor, President and Orator. He frequently presented scientific papers before its meetings. Later on he represented his State at the sessions of the American Medical Association and it was at these that he made acquaintances among men prominent in medicine and surgery in other parts of the country. Busy as he was and the busier he became, he was a more regular attendant upon medical society meetings than most of his confrères. In 1814 he was married to Miss Goodhue, the daughter of a prominent New Hampshire physician. She died after 33 years of their life together and seems to have been an ideal physician's wife, though Dr. Bowditch is inclined to bemoan the fact that she was too solicitous for his health and comfort and thereby kept him from entering the field of medical authorship where he might have made so many valuable contributions and left a more enduring impress upon American medicine. It would have been foreign to his nature, however, to have made any effort to push himself forward. In the matter of publishing his carotid ligation he was extremely reticent.[7] He was the recipient of numerous overtures to accept professorships at Dartmouth, Vermont Academy of Medicine, the University of Vermont and Bowdoin; in the latter place as a successor to his former teacher Dr. Nathan Smith. To all of these he made practically the same answer and that was that he had to consider his family and his own old age and could not afford the financial sacrifice. At the time these offers were made he was collecting between three and four thousand dollars a year from his practice and he pointed out that the $1,000 which he was told he might count upon in fees from students would not compensate for the long absences from home which such lectureships would entail and, as he said, most of these fees would be in the form of students' notes, fifty per cent. of which he would not collect.

As was to be expected anyone who aspired at that time to apply surgical methods to the treatment of such diseases as might fall within that province had an untilled field to cultivate, and many were the new problems that presented themselves for solution. It must have required, for example, considerable courage to trephine a long bone leaving out of consideration the series of observations that provided him with data and demonstrate the existence of pus within that bone which demanded a vent. Sir James Brodie, however, only anticipated by a few years Twitchell's recognition of what we now call Brodie's abscess and he was not helped in making this discovery by any knowledge of Brodie's work. In that most difficult branch of surgical technique, the removal of foreign bodies from the larynx, he several times demonstrated his skill and resourcefulness. The following is a portion of a manuscript address given before the N. H. State Society, Jan. 1st, 1830.

REPORT OF CASES OF TRACHEOTOMY

"In the great variety of operations which the Surgeon is called upon to perform perhaps there is no one, more appalling to Spectators, or which requires more disission (decision) and presence of mind in the operator than that of Bronchotomy or Tracheotomy And when performed for the removal of a foreign substance from the Larynx or Trachea there is no case in which the patient receives more immediate and manifest relief and in which the skill and dexterity of the surgeon is more duly appreciated, yet the operation itself if properly performed is not a dangerous one."

Case 1. August 5, 1827 was called to visit a child aged twenty two months, found her with symptoms of suffocation. The report given by her parents was, that about two hours before, she had been playing with some common field beans, had put some of them into her mouth and in the act of coughing, they supposed one of the beans had slipped into the windpipe. She was immediately seized with a difficulty of breathing, with occasional paroxisms of suffocation. Upon attentive examination and listening to the manner of her breathing I came to the conclusion that the bean was in the Trachea near its bifurcation and probably lodged in or over the left Bronchial tube as the lungs on that side of the chest did not expand in respiration.

The necessity of an operation was manifest and was proposed as the only means of rescuing the child from immediate danger. Her parents would not consent to it and as the foreign substance appeared to be fixed or stationary in the situation it was in, it was thought not proper to urge it at that time. The attendants were directed to watch the child attentively and if the bean appeared to come up into the upper part of the Trachea or Larynx and

strangle her, to endeavor to force it back again by rubbing and pressing the throat with considerable force.

I then left the patient and was absent two or three hours, upon my return I was met at the door by someone saying "The child lay dying". I found her with a livid countinance tossing herself about in various directions and gasping for breath, by pressing and rubbing the Larynx and Trachea the bean appeared to descend again to its former situation. An operation was no longer objected to, as it was evident that she must have immediate relief or death would be the consequence.

Preparations were soon made, the child was placed upon a table on her back with a roll of cloth under her neck and her head bent backwards over it, so as to stretch the integuments on the fore part of her neck, which was very short and fleshy. An incision was made through the skin and cellular substance extending from near the thyroid cartilage to the sternum, continuing the dissection on the fore part of the Trachea, some small blood vessels were divided and the hemorrhage was not so profuse as to delay the operation. The Thymus gland, apparently very long was next observed extending up the Trachea till it came in contact with the Thyroid Gland, it was carefully detached and the assistants, with some difficulty, secured with small blunt hooks, in holding the two glands assunder sufficiently to denude the Trachea, through which an incision was then made nearly half an inch in length, the air came hissing through the wound, and a pair of small forceps were passed into the Trachea and up through the Glottis by which it was ascertained that the foreign substance was not above the opening, then a pair of common dressing forceps were introduced and the blades separated so as to hold apart the sides of the Slit, they were but just placed in that situation when the bean during some little struggle of the child came up and was instantly siezed with the forceps and removed, the patient was turned face downwards to prevent the blood from getting into the Trachea; she immediately breathed easy & natural, the Glands and integuments closed over the slit so that no air escaped through it, within five minutes she was sleeping. After letting her rest a short time the wound was sponged clean & accurately brought together and retained by strips of adhesive plaster, a small compress placed upon each side and secured by a roller passed several times round the neck, she was then put to bed, rested quietly through the night. The next day, August 6 when I visited the child I found her running about the house apparently well. August 8. Removed the dressings for the first time, the wound had completely adhered by the first intention and there had been no febrile action after the operation.

August 12. The dressings were discontinued and the child was in perfect health.

Case 2. March 1, 1820. A child aged one year and sixteen days labouring under a slight catarrhal affection or influenza, while creeping upon the floor, put a piece of broken earthen cup into the mouth and in the act of coughing or laughing as stated by the parents it slipped into the throat and produced, in their language "a choking or an inability to swallow and a difficulty of breathing". Within half an hour after the accident I saw the child, his breathing was somewhat hoarse and hissing, but his friends said not much more so than before the accident happened. He could not be induced to swallow anything, but when a little water was put into his mouth after holding it a short time he ejected it. A probe was passed into the Oesophagus after which he swallowed readily and the breathing was less impeded, some castor oil was administered and mucilaginous drinks directed.

March 2. Nine o'clock A. M. eighteen hours after the accident the father of the child came running to me and said he was suffocating or to use his expression "was choking to death". When I arrived they had the child in their arms carrying him about the room in nearly an erect posture, he was restless, tossing his arms and endeavoring frequently to change his position his countenance was livid, his breathing very much impeded and sounded hissing and husky and was only in gasps. It was evident that the foreign substance was in the Larynx or Trachea and that he must be relieved immediately by an operation or death would ensue, preparations were quickly made and with the assistance of Doct. J. B. Dousman I proceded in the operation. The child was placed upon a table on his back, a small pillow rolled hard and placed transversely under his neck and his head bent back over it, so as to elevate his chin and make the integuments, tissue and the cartilages of the Larynx and Trachea prominent.

An incision two inches in length was made through the integuments, the Thyroid and Guttural veins were seen, very turgid, they were carefully detached sufficiently to be pushed aside and were not divided. Continuing the dissection on the fore part of the Trachea, an artery, the Thyroidia anastimotica was divided, at first it bled very freely, so that we were obliged to suspend the operation a few minutes, the bleeding soon ceased, an incision was then made through the Trachea, half an inch in length, the air came freely through the wound and the child breathed with more ease. After delaying a short time that he might in some measure recover from his exhausted and suffocated state, a small pair of forceps were passed through the Slit in the Trachea upwards towards the Glottis, it immediately came in contact with the piece of earthen ware the sound of which was distinctly heard by the bystanders. Every attempt to sieze it with the forceps proved ineffectual. A probe was then curved and passed into the Trachea and endeavors made to dislodge it but did not succeed, during which the child struggled much and at length became so much exhausted that the spectators thought him about expiring. A large probe was then introduced with it the foreign substance was pushed up through the Glottis into the Pharynx and the Child swallowed it, afterwards a bougie was passed up through the Larynx and Glottis with which it was ascertained that all obstruction was removed.

In the various attempts made to dislodge this substance it was pretty well ascertained that it was sharp and angular and being so firmly fixed that it required considerable force to push it into the Pharynx, the probability was the delicate sensible membrane lining the Larynx and upper part of the Trachea, was very much lacerated and wounded. Under these circumstances it was thought advisable not to close the wound that respiration might go on by the air passing through the slit in the Trachea in case the subsequent inflammation should be so great as to close the Glottis. Some superficial dressings were applied but a portion of the incision was left open. The child was then put into bed and although very much exhausted his respiration was tolerably free and easy. In the evening he was unquiet, had slept some and had taken some light nourishment, the air had occasionally passed through the wound.

March 3. There was considerable febrile action, the breathing was rather more laborious, some portion of the air passed through the incision at almost every breath. A cathartic of Caster oil was administered. In the evening the oil had purged two or three times and he was resting quietly breathing as in the morning.

March 4. The external parts appeared considerably swollen and inflamed. In respiration the air passed wholly through the incision in the Trachea. The Glottis was apparently closed by the inflammation; he could make no vocal sound. Six grains of Calomel was given to be followed with Castor oil to purge freely.

5. The cathartic had operated several times but the symptoms continued much as they were on the fourth. The Trachea itself in that part appeared very much contracted which was ascertained by passing a probe through the opening.

March 6. Suppuration had commenced in the wound, he breathed, at intervals rather laboriously then continued to pass wholly through the opening in the Trachea he can neither cry aloud or make any noise.

7. Suppuration was copious, he coughed a good deal and when coughing some air was forced through the Glottis carrying with it pus and mucus.

8 & 9. He appeared to be failing, took but little nourishment, suppuration continued very copious, pus very thick and glutinous and when any of it was carried with the air through the wound in the Trachea it produced violent fits of Coughing and strangulation. At intervals he breathed more freely mostly through the glottis, could cry aloud and articulate some word. That is after he had expelled a good deal of pus and mucus during a paroxism of coughing.

10. His breathing was more laborious, with apparent ability to cough or expectorate granulations had sprung up in the wound and appeared to impede the passage of the air and either from inability or disinclination he had ceased taking any nourishment and his mouth and fauces were aphtous for which a gargle of Borax and honey was prescribed.

March 11. In the morning a messenger came in great haste and said that the child was suffocating. I found him breathing very laboriously and croupy, countenance livid with the expression of great anxiety, unable to make any sound. The incision in the Trachea was mostly covered and the Trachea itself in that part appeared very much contracted, which was ascertained by passing a probe through the opening. And very little air appeared to pass into the lungs anyway. In this situation we concluded the indication was, if possible, to dilate the stricture of the Trachea and to clear it of the tenacious mucopurulent secretion with which it appeared to be filled, with that view I passed a pretty large sized urethral bougie into the Trachea and first pushed it up through the lungs, it produced considerable coughing and a good deal of mucus and pus was discharged into the mouth and either ejected or swallowed and some came through the wound. This appeared to give immediate relief, it restored his voice and he breathed with much more ease. A decoction of Senna and squills prepared after the formula for 6 ozs. Hoar Syrup was directed to be given in doses of a teaspoonfull and the gargle of Borax and honey to be continued. In the evening the child had puked several times and had two or three alvine discharges, breathed more freely and had taken some nourishment.

12. Much improved, respiration was natural and easy but little air escaped through the wound and that only when he cougned cried or was agitated, he took sufficient food and the apthous appearance of the mouth was principally removed.

Mar. 14. He had gained rapidly he was sitting up in bed diverting himself with playthings and breathing perfectly naturally.

20. He had continued to improve, the opening in the Trachea was closed the wound filled up and nearly cicatrised. Discontinued my visits.

April 4th. Called to see my patient found him in perfect health, the cicatrisation of the wound had been complete for several days."

Case 3rd. On the 30th March 1830 I was called to meet Drs. Carpenter, Hatch and Bliss in consultation on the case of Sarah, daughter of Edmund Walker of Langdon, aet. four years and four months. We learned from the parents that on the evening before, one of some large kidney beans with which she had been playing had slipped by some means into the trachea. She was immediately seised with difficulty of breathing which had continued ever since: occasionally amounting almost to suffocation. At the time of our visit the breathing was hissing and husky; and as we found on auscultation, that the right bronchial tube was obstructed, we concluded that the bean was lodged near the bifurcation of the trachea. An operation was immediately decided upon as the only means of affording relief.

The child having been placed on her back on a table with her head bent back over a roll of cloth in order to render tense the integuments on the fore part of the neck; an incision of about two inches in length was carried from the thyroid cartilege to the sternum: and the fore part of the trachea was laid bare by a careful dissection. A longitudinal incision of rather more than half an inch in length was then made into the trachea—through which the air passed freely. The bean soon made its appearance presenting its flat side to the incision the side of which did not seperate sufficiently to let it pass. As I was attempting to seise it with a pair of forceps it slipped from my grasp, was forced upwards and became fixed in the larynx; which it completely filled, preventing any air passing that way. An attempt was made with a large probe to force it up through the glottis; but this could not be effected without too much violence.

At that time, the child was struggling violently; and the assistants who held apart the sides of the incision lost their hold. The integuments of the neck which was very fleshy immediately closed over the aperture; the respiration was completely stopped; the lungs collapsed; the child straightened herself, her countenance became livid, her eyes motionless and glassy, and the spectators cried out that she was dead. The sides of the incision were instantly seperated and held apart by the blades of a pair of dressing forceps introduced into the trachea; but no air passed and the child continued motionless. I asked for a tube or some instrument with which to inflate the lungs; but the agitation of the friends and attendants prevented their giving me any assistance. I seised a bougie which happened to be near and passed it through the incision downwards towards the lungs; and directed an assistant to make pressure in different directions on the chest. The bougie appeared to irritate and cause motion in the chest and on its removal some little air rushed into the lungs and respiration very gradually was restored. Having passed a small pair of forceps upwards into the glottis I seised the bean and removed it. The respiration immediately became free; and as soon as she had somewhat recovered from her exhaustion, the wound was sponged and dressed with strips of adhesive plaster; and she was put to bed and was soon asleep.

31st March. The patient had considerable febrile excitement; and croupy breathing. I directed a purge of Hydr. Sub. Mur. with Pulv. Jalap to be followed by Mag. Sulp. and also that a little of a solution of Ant. Tart. should be given occasionally till the febrile symptoms should have subsided.

April 2. After the removal of the dressings a very little air escaped through the incision: it had principally united by the first intention.

April 7th. The incision had completely united: and the child was in perfect health.

The last two decades of his practice found him with more than he could attend to. The long rides over poor roads and especially in the face of the rigors of the old fashioned New England winters took their toll of him and he was forced to limit his practice, much against his desires. He notified those who were seeking his diagnostic skill and surgical ability, but who lived remote from Keene, that he was obliged to restrict his

work to "capital" surgery for the reason that there were few competent operators in the locality; after these demands were satisfied his own friends and neighbors had the call and after them he would enlarge the field in accordance with the urgency and importance of the cases. Remembrance of his own student days made him very solicitous for those whom he regarded as worthy who were seeking to fit themselves to practice medicine and were laboring under financial difficulties in achieving their aims. To many of these there is evidence, in letters that remain, which are full of good advice and encouragement and contained that which was probably quite as acceptable, viz.: a draft to pay their term bills, that he was sympathetic with the struggling young physician. The problems growing out of the care of the insane must have made a strong impression on him as he met them in his goings up and down throughout the State for he concerned himself with these very actively until he became disgusted with the political turn which the efforts were taking, when he dropped the matter altogether. He was a strong advocate of temperance, entering actively into the campaigns of that period to spread the gospel of total abstinence. He was almost as outspoken against the use of tobacco. His association with Nathan Smith had evidently impressed upon him the importance of chemistry to medicine. With him, he had been associated in the teaching of Chemistry at Dartmouth and he often expressed himself as looking forward to the time when it would be shown that chemistry played a very important part in the economy of the human body and was a very vital factor in the study of its diseases. The interest he manifested in the organization of the American Medical Association was prompted by the same motives that attracted him to the State Society to which he always gave his loyal support. When it was organized he was sent as a delegate and the contacts he made there were always a source of great satisfaction to him. He was on the national committee of the society the year that they met in Philadelphia and at the first session held in Boston he was chairman of the Business Council, so that his ability was recognized not merely by his peers among the New Hampshire hills but on the larger forum of the nation. On the occasion of society meetings he had little to say in the general sessions, but in the quiet of the committee room his influence was very strongly felt. His personality impressed itself upon all who came to have any close relations with him. He was a large framed man of rather quick motion, though of a shuffling gait. He had a kindly but very penetrating eye which gave one the impression that he could look into the very depths of one's being. He had a large, well shaped head and was, altogether, rather an impressive figure, suggesting the possession of a masterful sort of energy. Kindly in his relations with his family and friends, rather brusque in his manner of meeting one for the first time, though he soon corrected that impression, intolerant of any sham or quackery and capable of a righteous indignation toward those who knowingly were in the wrong, modest to a fault where his own accomplishments were concerned yet clearly well pleased at the adulation of those who recognized the ability which he knew that he possessed, the confidence in which perhaps kept him from ever seeking a consultation. Daniel Webster, who knew him well, said of him, "I should have looked to Dr. Twitchell, as soon as to almost any other man, for whatever could be accomplished by intellectual energy and application." He had little time for keeping up with the literature of that day even and much less for writing, but a quick perception and keen intellect made up for the one while his contributions to medical literature, in their originality and clearness of expression, compensated for their scarcity. Among his papers, aside from the ones which are here in the form in which he wrote them, is one on Quackery, an address before the N. H. State Medical Society. What he had to say about the way to check it is just as true today as when he wrote it*: "The fact is that the regular profession generally is now more learned and better qualified to practice than formerly and are much better instituted to the confidence and patronage of society. But do they obtain it? Are they any more respected now than they were when their whole stock of medical information was contained in a bundle of recipes? Do we not see the ignorant and itinerant quack still employed to their exclusion? How is it that the public are thus imposed upon and how shall the evil be remedied? The liability of mankind to imposition and of becoming the dupes of the cunning and crafty is in a large proportion to their intelligence and general information. Wherever we find the common mass of people well informed not only in the objects of their particular pursuits but upon subjects generally, that is, they have been from their infancy rotundly and philosophically educated, there we find no imposter fattening upon their credulity, but where we find them generally ignorant and consequently credulous and superstitious then we find the hipocritical and fanatical Priest, the Pettifogging Lawyer and Quack Doctor.

"It is a lamentable fact that the learned professions have heretofore found it too much for their interest to keep the rest of mankind in ignorance and by so doing they have frequently obtained, not only the good things of this world but a character for learning, wisdom and sanctity, to which they were not intitled either by their talents, intigrity or acquirements. If we recur to the history of medicine as handed down to us by its professors, we shall find that the practitioners in the art or science have al-

*From manuscript address on Quackery read before the N. H. State Med. Soc.

ways been induced to assume some mysterious or supernatural skill and have studiously endeavored to keep their patients in ignorance by clothing their prescriptions in a technical garb and by holding their communications with each other in a language intilligable only to themselves, thus inspiring the uninformed with a belief that there is something in the profession beyond the comprehension of ordinary minds and that they have been supernaturally indowed with faculties which inable them to penetrate into and comprehend all the mysteries of nature.

Occupied as I have constantly been, in the practice of our laborious profession, I have found no leisure to dijist (digest) or prepare for the present occasion, a regular essay upon any medical topic but the honorable station in which by the suffrages of this society I am placed, imposes upon me the duty of addressing you upon some subject connected with medicine.

Ever anxious to see the character of our common profession elevated to a proper standing which will exempt it alike from a suspicion of selfishness and from being the butt of ridicule among all classes of society and placed on an imminence which will command the respect and deserve the confidence of the community at large I have been induced at this time to occupy your attention a very few moments with some reflections upon the present condition of the medical profession and an inquiry into the causes which hinder its advancement and what course we ought to pursue to promote its reputability and to retard the progress of impericism or banish it from amongst us.

Within the last half century there has been a very rapid improvement in the science of medicine under which title I wish to be understood to include not only the science, which is at present so denominated but likewise surgery which was formerly the case, within the period named there have been great numbers who have ingaged in the pursuit who have been brought with them a vast fund of talents, industry and acquirements the whole of which they have unremittingly devoted to the subject, in short almost all those who are now ingaged in the profession appear to pursue it with an arder heretofore unexampled. Medical schools have now become very numerous and respectable where medicine and its colateral branches are taught and studied in a systematic manner, from these fountains issue annually many young men not only well informed in the principles of the profession but possessing talent and industry to pursue it with credit to themselves and advantage to the public. As a natural result from the cases we have named.

Even in this country where the principles of all the other arts and sciences are placed within the reach and comprehension of the common people, that of medicine is still in a great measure hidden from their view. The language of medical men and medical writers is not adapted to the understanding of mankind generally, it is not the common language of this country nor of any other country now existing upon earth.

So long and so generally has this method of writing and speaking prevailed among the most learned of the profession that now the physician and surgeon, who in his intercourse with his patients should use a language perfectly intiligable to them would be considered by many as a very unlearned man and not deserving of their confidence. Is it strange then, if the regular and Learned physician thus keeps himself aloof and suffers not the common run of people to approach him and know him, that the crafty quack distitute alike of information and moral honesty should frequently palm himself upon the public as one of those duly instituted into all those mysteries which are supposed to belong to the profession. All this secrecy and mystery in the practice of medicine is an imposture, is quackery, let who will adopt it and so long as there is so much of it in the profession persons of common education cannot discover the difference between the learned quack and the ignorant one. A few years since, a gentleman, after having had an interview with a noted empirick whose fame was then spreading far and wide, observed to me, "Well I have been to see the Indian Doctor." And what do you think of him? "I cannot for my life discover any thing why he is not as learned and as skillfull as any M.D. I ever saw, he converses in a language as uninteligable as the best of you". I considered this a severe and just rebuke upon the profession generally.

There are various ways of playing the Quack as Rush observes. It is not necessary for this purpose that a man should advertise his skill or his parts, or that he should mount a Phaeton and display his dexterity in operating to an ignorant and gaping multitude. A physician acts the same part in a different way, who assumes the character of a madman or a brute in his manners, or who conceals his inability by an affected gravity and taciturnity in his intercourse with his patients.

There are some, who are continually boasting how much more successful they are in their practice than their neighbors, of the marvelous cases and operations which in fact they have never affected or performed. Others magnify the danger and importance of the most trifling indisposition, or make a great parade about any surgical operation, let it be ever so simple, by calling in a large number of Physicians and Surgeons to hold a council, (as they term it) upon the case, thus unnecessarily alarming the patient and his friends for no visible purpose, unless it be to secure a retreat from blame if they ef-

fect a cure and enable them to augment the amount of their charge for services.

Some boast of their superior attainments and of the great opportunities they have had for acquiring medical information. I know a Physician who was never in his life a hundred miles from the place of his nativity. Yet he says "It must be strange if he does not know more than other practitioners in his neighborhood. He says, and many believe it, that he has obtained all the information that was to be had from the best medical schools in this country and then he has spent two or three years in Europe. He is intimately acquainted and corisponds with all the most eminent and learned men in the profession. What they know, he knows, whatever they learn or discover they immediately communicate to him.

When a patient, upon whom he had been attending a long time, expressed a wish for other advice he said 'I have written to the greatest Doctor in England and stated your case to him and he has sent me a medicine which he says never fails in such cases. You had better delay calling other advice till I have had an opportunity to give it a fair trial. This course had the desired effect and it prevented at that time the consultation which he dreaded.

There are some physicians, who are very well qualified, yet so deceive and impose upon their patients by administering inert or useless remedies and by taxing them for much necessary attention. Within the last year a young Gentleman of a fair mind, well educated in the profession possessing liberal and correct principles, commenced practice in a town in this state. He was called to visit a child in a respectable family, he found it affected with some slight febrile symptoms, he prescribed the remedies he thought indicated, but the anxiety of the parents was such that they were unwilling to trust the young Doctor, alone, and an older one was called, he came and examined the case and was informed of the treatment, which had been pursued, he enquired 'did you give the submuriates meaning calomel, which name he avoided using lest it should be understood that a potion of mercury had been administered, he was answered in the affirmative. He then took the young physician aside to hold a consultation as he termed it. When by themselves he said to him "you have treated the case very properly but that will not do, you must give more medicine or you will never be able to satisfy the people and obtain their confidence. In this case I should advise you to colour some water, or a weak solution of Nitre with red powders and give the child a tea spoonfull once in two or three hours until its recovers its usual breath.

A few days afterwards the young gentleman called upon me and inquired if such was the course that regular physicians pursued, and whether this society tolerated such practice.

The following circumstances were related to me by a reputable clergyman of this state. A farmer, one of his parishioners, had the misfortune to fall from his cart and one of the wheels passed over him, directly across his abdomen, although the vehicle was not heavily loaded, yet he was somewhat bruised and very much frightened. A messenger was dispatched with all posable haste for the Doctor who resided in the neighborhood, who came with due speed and as a thing of course bled him largely and administered a dose of castor oil. The Doctor was then informed that they had sent for a surgeon, who resided some 20 or 30 miles distant, whose reputation was unrivalled in that part of the country. The next day the Minister was sent for, who with the neighboring physician was present when the surgeon arrived. The patient had passed the night with great deal of anxiety, although with but little pain. The arrival of the great Doctor was announced the family and friends all crowded around the bed of the patient, the Surgeon entered the room with his saddlebags upon his arm and turned his eyes directly upon the wounded man, he stood several minutes gazing upon him, during which time his countinance put on a most direful and portentous aspect, although he shook his head, set down his saddle bags and laid off his hat, drew up a chair and seated himself by the bed, placing an hand upon the abdomen of the patient with the other felt his pulse and spoke not a word. Some minutes passed in this manner, when the deathlike silence of the room was interupted by the anxious and affectionate wife, tears streaming down her cheeks by "Doctor what do you think" a shake of the head was the only reply. The children burst into tears, one little urchin, too young to fully realize what was going on hearing the sobs of his brothers and sisters, threw down the cat with which he was playing and ran to his mother for an explanation. Unfortunate for poor Puss, the Doctor espied him, siesed him by the hind legs and smashed his head upon the hearth, drew forth a knife and convinced the spectators that he was a dextrous operator by instantly depriving the cat of her skin and applying it directly upon the abdomen of the suffering man, again seating himself with one hand upon the wrist, feeling the pulse, in which posture he continued half an hour, and then for the first time after his arrival, broke silence by inquiring if they had any sheep, being answered in the affirmative he requested that a skin might be stripped from one of them and brought him immediately, which was accordingly done, the Doctor instantly removed the Cat skin and enveloped the patient with warm sheep skin and continued silently watching him as before, the anxiety of the patient and family was extreme during this farce, which was manifested by the inquiry of "Doctor what *do* you think, is there no hope" but not a word could they obtain.

After remaining in suspense nearly an hour longer Closely watching the countenance of the Doctor, they discovered that the muscles of his face began to relax, although he smiled and then broke silence and said, we have gained it, you are safe, If I had been five minutes later all the world could not have saved you the mortification was just beginning.

In the course of day or two the farmer was able to pursue his labor as usual, believing that his life was preserved by the great skill of the surgeon.

If such are the impositions and disceptions practiced by regular physicians, as they are called, by those who have had the honorable Degree of Doctor of Medicine conferred upon them and are in regular standing in respectable medical societies, it will be in vain for our legislature to ennact laws against the ignorant pretender.

The most rational and I presume the only successful method for us to combat quackery will be, in the first place, to avoid it ourselves and then endeavor to inlighten the common people as much as posable, let them understand that the principles of the profession are founded upon reason and service, and that we are governed by those principles, we make no pretentions to supernatural powers. Let us banish all technical phraseology from our pharmacopies. Let us be unwearied in our efforts to investigate the nature and causes of disease and the effects of remedies. When called to the bed of sickness let us be very critical in our inquiries and examinations, and patiently investigate every circumstance relating to the case, and after having formed an opinion let us be candid in stating our views of the case to the patient or his friends, explain to them if possible the location and nature of the disease, the indications of cure which are to be pursued and the remedies we intend to prescribe, with the effect we expect they will produce. So long as there is Learned and Licensed quacks in this country, so long will the ignorant and unlearned ones obtain patronage from the public."

Some very excellent advice is given in a paper on the treatment of a case of Thigh Fracture where he took the ground that he would not set a fracture which he was not to have the after care of, not because of possible medico-legal complications but because he did not wish to share with anyone the responsibility for a possible mischance in the after treatment. Two other addresses one on the "Effect of Tobacco on the Human System" and the "Effect of Ardent Spirits on the Human System" and reports of cases of carcinoma, and stone in the bladder treated by lithotomy, represent all the contributions he made to literature which have been preserved. During the last eight years of his life he suffered somewhat from the infirmities common to a more advanced age than his but was able to be actively engaged in his practice until the week before his death. During that week he had a shock and though paralyzed on one side his mind remained clear until his death which occurred on the twenty-sixth day of May, 1850.

(In the *International Abstract of Surgery*, Jan. 1929, pp. 1-3. Under the title of "Landmarks in Surgical Progress", Dr. Irving S. Cutter of Chicago has reviewed Amos Twitchell's life with especial emphasis upon the part he played in proving that the common carotid could be ligated without causing injury to the brain. John Hunter had paved the way to the demonstration of this by his operation upon a deer in whose rapidly growing antlers he had detected the heat generated by those metabolic processes accompanying rapid proliferation of bone. He thought by tieing the carotid he could check, or stop, this but found that he was in error; later he proved however that collateral vessels were developed to a sufficient extent to discount the loss of the carotid blood supply.)

I think it would be generally conceded at any time, that the surgeon who could deal with such problems as were presented to Dr. Twitchell in the case of the gun shot wound of the neck, foreign bodies in the larynx and inflammation in bone was competent to handle any kind of surgery. If it is remembered that this was all done before anyone was *known* to have successfully accomplished it in respect to two of the conditions and probably in case of the third as well, I believe we must credit that man with an honorable place in the front rank of surgical pioneers.

REFERENCES

1 Petit. Chir. Mem. de l'Acadamie Roy. des Sciences, 1765.
1a Matthew Bailey's report in 1798 of a spontaneous cure of carotid aneurism by obliteration of the carotid artery.
2 Zusatze zu Benj. Bell's Abhandlung von den Geschworen und deren Behandlung, 1793.
3 Med. Chir. Jour., V. III, p. 2.
4 New Eng. Jour. of Med. and Surg., XIII, 1824.
5 Med. Chir. Transactions, V. I, 1809.
6 Trans. of a Soc. for the Improvement of Med. and Surg. Knowledge. Lond. 1793—pp. 122.
7 Dr. Geo. Cheyne Shattuck, Jr., in 1843 obtained from Dr. Twitchell permission to publish the account of this operation (done in 1807) and it appears in the New Eng. Quarterly Journal of Med. and Surg. in that year.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15291

FREQUENT NOSEBLEEDS

MEDICAL DEPARTMENT

An American florist thirty-three years old entered March 2. The chief complaint was nosebleed.

Six weeks before admission he began to feel tired. Two weeks later he had a rather severe nosebleed. During the following week he felt more tired and had mild nosebleeds daily. Three weeks before admission he had fever of 102°, malaise and general aching in his body. He went to bed. Two days later the fever came down and he got up. The nosebleed and tired feeling continued and a low grade fever soon returned. For the next ten days he spent most of the time in bed. His condition became steadily worse. He began to have tinnitus at times. He had pain in his back and night sweats and urinated once at night. Nine days before admission he felt much worse A consultant was called who found the leukocyte count 48,000, chiefly lymphocytes. On arrival at the Massachusetts General Hospital after the journey from Maine the patient had the worst nosebleed he had had.

His family history is negative.

Except for gonorrhea fourteen years before admission with no symptoms since treatment his past history is negative.

Clinical examination showed a fairly well developed and nourished young man with hot, dry skin and leaden pallor. Mucous membranes very pale. Steady bleeding from both nostrils. Many teeth missing. Slight pyorrhea. Tongue dry. Ragged tonsils. Clots in the nasopharynx. Discrete pea to bean sized glands palpable in both cervical chains, the supraclavicular fossae, axillae and epitrochlear, inguinal and popliteal regions. The chest showed Harrison's grooves. The lungs showed scattered whining râles. Apex impulse of the heart felt 8 centimeters to the left of midsternum, coinciding with the left border of dullness half a centimeter inside the midclavicular line; right border of dullness 4 (?) centimeters to the right, supracardiac dullness 6.5 centimeters. Action rapid. Sounds of fair quality. A low pitched systolic murmur all over the precordium, loudest at the second right interspace, where there was also a short higher pitched early diastolic. Pulses of low tension. Arteries normal. Blood pressure 125/55 to 85/40. Abdomen scaphoid. A huge spleen extending down to the umbilicus. Pupils and reflexes normal. Both eye-grounds pale. Several radiating hemorrhages (?) about the right disc. A red body (blood?), free, overlying the retina and disc. Two radiating blotches around the left disc (hemorrhage?).

Urine: amount normal, specific gravity 1.012 to 1.022, a large trace to the slightest possible trace of albumin at 4 of 11 examinations, ferric chloride positive at the next to the last examination, rare to occasional leukocytes in 6 specimens of sediment, occasional red cells once. Blood: hemoglobin 45 to 25 per cent, reds 1,380,000 at entrance, 1,900,000 after transfusion, 1,250,000 the day of death; anisocytosis, poikilocytosis, slight achromia; practically no platelets at entrance, platelets normal March 8 (three days after transfusion), markedly diminished March 12, very few present March 24; leukocytes 28,800 at entrance, falling to 2,000 March 12, then increasing to 22,000 March 24 and 892,000 the day of death; reticulated cells 5 per cent March 14, 14.2 per cent March 20, less than 0.5 per cent March 28. One Wassermann weakly positive, another negative.

Temperature 104° to 99° until March 16, then 98° to 99.4° until March 24, then 99° to 101.7° with a terminal drop to 95.5°. Pulse 79 to 130. Respirations not remarkable.

An X-ray consultant reported, "As a rule X-ray does not help this type of case. Still I think it should be tried after he has rested and stopped bleeding". A medical consultant advised against radiation.

Bleeding from the nose continued in spite of packing. March 5 transfusion was done. The general condition remained about stationary. March 9 the nosebleeds stopped. The patient seemed a little brighter and stronger. A sore looking like a septic blister (but not tender) with hemorrhagic border developed on the fourth right finger. He continued to improve clinically. March 22 another transfusion was done. Two days later the smear showed moderate achromia, marked variation in size, some variation in shape, 13.8 per cent reticulocytes, very few platelets; differential count: 10 per cent polymorphonuclears, 86 per cent lymphocytes. March 27 the leukocyte count was 200,000. There was fever. The patient was feeling worse. He failed rapidly, became practically blind from retinal hemorrhages, and March 31 died.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE PHYSICAL EXAMINATION

After that leukocyte count of 48,000, chiefly lymphocytes, the diagnosis is practically settled —leukemia.

892,000 is one of the highest leukocyte counts I have ever seen. I have seen however more than a million; not often.

Certainly in private practice I should say, do not advise radiation if you have a case like this where the anemia is bad and the patient is going to die soon anyway. When the patient dies you will be blamed. It is very important not to bring a method into your treatment when you know that it cannot do any good and that death is near.

13.8 per cent reticulocytes shows that the bone marrow is making a tremendous effort in the attempt to regenerate red corpuscles.

DIFFERENTIAL DIAGNOSIS

I do not see any reason to modify our snap diagnosis. It seems inevitable from the first that he had lymphatic leukemia. The only question is as to the complications. Could he have an acute endocarditis? The lesion of the finger slightly suggests that. Leukemia without any complication often produces fever, so that we do not have to think of endocarditis on that account. They have mentioned a diastolic murmur only once. It is dangerous to reason on such a basis. From my experience a diastolic murmur mentioned once only in the Massachusetts General Hospital records rarely means anything. I think it is safer to say that the heart did not show anything. He might have had acute endocarditis. There was no aortic regurgitation to amount to anything or it would have shown in the pulse or the pulse pressure.

A STUDENT: Are diastolic murmurs ever present in anemia?

DR. CABOT: Yes. Cases like this might have a functional diastolic murmur. That is what I meant when I said it was "not anything."

A STUDENT: Do you consider a pulse pressure of 70 high?

DR. CABOT: Not in anemia. Most anemic people, whatever the cause of anemia is, have high blood pressure. Flapping carotids were first mentioned as a possibly suggestive sign in the anemia from hookworm disease.

A STUDENT: Do you consider this an acute or a chronic process?

DR. CABOT: I do not think it makes much difference. It can be the "acute" end of a chronic case. It is important to distinguish leukemias that bleed and those that do not. Those that bleed always die soon and so ought always to be let alone as far as radiation is concerned. Whether this was acute or chronic with an acute flare-up nobody can say on the basis of these facts.

A STUDENT: Was the X-ray before the 12th of March?

MISS PAINTER: There was no X-ray, but Dr. Holmes' consultation was on March 3.

DR. CABOT: There is no evidence that the patient ever had X-ray treatment.

A STUDENT: Was it not unusual to have the white cells change as quickly as that?

DR. CABOT: To which period are you referring?

A STUDENT: The count goes from 22,000 on March 24 to 892,000 on the 31st.

DR. CABOT: I should say it was a little rapid, but I have seen the same thing a number of times.

A STUDENT: How do you account for the fall to 2,000?

DR. CABOT: I do not account for it. It happens especially in acute infectious complicating diseases. Sepsis, pneumonia, pleurisy, tuberculosis—any acute infection knocks down the white count. We have not much evidence of acute infection here, but it is perfectly possible that there is one.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Acute lymphatic leukemia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Lymphatic leukemia.

ANATOMIC DIAGNOSES

1. *Primary disease.*

   Acute lymphatic leukemia.

2. *Secondary or terminal lesion.*

   Central necrosis of the liver.

3. *Historical landmarks.*

   Hypertrophy of the prostate.

DR. TRACY B. MALLORY: Autopsy showed only the usual findings of lymphatic leukemia. All the organs showed a marked interstitial infiltration of leukemic cells. The spleen of course was enormously enlarged and contained, as often, numerous infarcts. There was no endocarditis, and no evidence of any terminal infection whatever.

DR. CABOT: Just fix that case in your memories if anyone says that there must be infection when fever, hemorrhages and leukopenia occur in leukemia. Here is a case where there was no infection, yet all three of these signs were present.

CASE 15292

COMA, TWELVE HOURS' DURATION

MEDICAL DEPARTMENT

A Swedish-Canadian hardware clerk of twenty was brought to the Emergency Ward March 18 in coma of twelve hours' duration.

Six weeks before admission he had malaise, some fever, painful slightly raised red spots on the body which cleared rapidly and aching of the muscles. His physician made a diagnosis of

grippe. After a week the patient was up for three days, then had a relapse and was in bed again for three days. Since the relapse he had had dull frontal morning headache on the left, faintness and vomiting every two days. The rash recurred for a few days, and reappeared several times before admission. He continued to work regularly. March 16 he went home from work with an attack. Next morning his headache was worse. The morning of admission it was very severe. He vomited and went into coma.

Clinical examination showed a well nourished, flushed boy, unresponsive yet resistant. *Tâche cérébrale.* Herpes of the left nostril and chin. Neck stiff. Pupils small; reactions not made out. Vessels of the fundi engorged; indistinct disc margin on the right. Left knee jerk increased. Abdominal reflexes not obtained. Questionable Babinski on the left. Poor Kernig.

Urine: amount not recorded, specific gravity 1.012 to 1.024, a very slight trace of albumin at one of six examinations, diacetic acid at one, leukocytes at all. Blood: 36,000 leukocytes at entrance, falling to 10,600 March 23; polymorphonuclears 73 to 76 per cent, young polymorphonuclears at one of two examinations, reds normal, platelets increased twice, later normal twice. Hinton negative.

An ear and throat consultant found the ears essentially negative; some redness and congestion of the nasal mucosa, particularly on the left side.

Temperature 101° to 99° for the first three days, then normal until March 28, 103.8° to 97° until April 5, afterwards normal. Pulse 59 to 115. Respirations 14 to 29.

Lumbar puncture the day of admission gave over 55 c.c. of turbid fluid clearing with sediment on standing; initial pressure over 600 mm.; cells 18,300 leukocytes, 92 per cent polymorphonuclears, 8 per cent lymphocytes, total protein 296, colloidal gold 0001123444, chlorides 662, sugar 71.5, Wassermann negative. Smear showed numerous leukocytes and a few Gram-positive granules which did not appear to be organisms, but no diplococci. Cultures on four media, no growth.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

You have to ask yourself the common causes of coma at twenty. They are not very numerous. "Grippe" covers a multitude of sins.

A snap diagnosis at the end of the history would certainly be meningitis. It is a snap diagnosis, but that is what anybody would say.

NOTES ON THE PHYSICAL EXAMINATION

At twenty a Kernig is much more important than in an older person whose legs are more or less stiff all the time.

Nobody could say the findings of the ear consultant were very significant.

In the spinal fluid the total protein is much increased. The colloidal gold is not characteristic.

DIFFERENTIAL DIAGNOSIS

I presume you have made the same diagnosis which I made. I do not see how anybody could make but one diagnosis, meningitis. What kind of meningitis? You say purulent meningitis because of the amount of cellular exudate and the suddenness. It is not tuberculosis in all probability because of the suddenness of the onset, the absence of cranial nerve symptoms, the absence of any tuberculous history or previous lesions and the character of the spinal fluid. It is not otitic meningitis because the ears have been carefully examined and I suppose the mastoids, and nothing was found. It was the type ordinarily called epidemic even though we do not find it epidemic. Why the organism was not found I do not know, but I know they often are not found in the spinal fluid.

Could this be cerebral abscess? So far as I know we have nothing to indicate that in the physical examination.

We have a sequel, I understand.

What treatment would you give in this case? Serum. They took a chance I suppose with anti-meningococcic serum, though we have not proved in the least that it is meningitis. It is a case of heads you lose, tails I win. It would not do him any harm if he did not have meningitis and it will be his best chance if he did.

FURTHER HISTORY

At the first lumbar puncture 45 c.c. of anti-meningococcic serum was introduced. (See table.) March 19 another puncture gave 40 c.c. of turbid yellow fluid, initial pressure 450 mm., cells 9,500, total protein 334, sugar 50. A third puncture that afternoon gave 33 c.c. of similar fluid, oscillations marked, initial pressure 300, rise and fall fairly slow. Twenty-seven c.c. of antimeningococcic serum injected. March 20 a fourth puncture gave 35 c.c. of fluid, initial pressure 550, with marked oscillations. Drained to zero pressure and 25 c.c. of antimeningococcic serum introduced. A fifth puncture that evening gave 25 c.c. Drained to zero pressure and 13 c.c. of serum introduced. March 21 a sixth puncture gave 30 c.c. of fluid. Drained to zero pressure and 15 c.c. of serum given. That day there was marked Kernig and stiff neck, no reflexes. The patient was conscious. March 23 fifteen c.c. of clear very faintly yellow fluid was drained, initial pressure 110. The following day the reflexes had returned and the neck was only slightly stiff. March 26 the neck was no longer stiff. March 27 the patient was absolutely symptom free and sat up for ten minutes.

The following morning he was restless, had headache, vomited liquids, and had a chill with

temperature of 103°. The leukocyte count was 58,000. The neck was slightly stiff. There was a recurrence of the skin lesions which were present at the onset. A skin consultant believed the eruption to be of toxic origin. A neurological consultant noted a positive Oppenheim on the right. March 28 a lumbar puncture gave 36 c.c. of clear colorless fluid, initial pressure 400.

Date	Amount	Character	Initial pressure	Leukocytes	Sugar	Amount of serum given
March 18	55 c.c.	Turbid	Over 600 mm.	18,300	71.5	45 c.c.
March 19, a.m.	40 c.c.	Turbid	450 mm.	9,500	50	0
March 19, p.m.	55 c.c.	Turbid	500 mm.	3,440	46	27 c.c.
March 20, a.m.	55 c.c.	Turbid	550 mm.	2,120		25 c.c.
March 20, p.m.	25 c.c.	Hazy	450 mm.	1,860		13 c.c.
March 21	30 c.c.	Almost clear	300 mm.	320	57.5	15 c.c.
March 23	15 c.c.	Clear	110 mm.	152	47	0
March 28, a.m.	36 c.c.	Clear	400 mm.	36	51	20 c.c.
March 28, p.m.	35 c.c.	Hazy	350 mm.	960		24 c.c.
March 29	30 c.c.	Bloody	260 mm.	830	25	25 c.c.
March 31	30 c.c.	Clear	300 mm.	149		20 c.c.
April 1		Very sl. hazy	235 mm.	500	39.5	15 c.c.
April 3	50 c.c.	Clear	315 mm.	68	45	45 c.c.
April 12	20 c.c.	Clear	215 mm.	19	47.5	0

20 c.c. of antimeningococcic serum was given. That evening another puncture gave 35 c.c. of hazy colorless fluid. 24 c.c. of serum was introduced. March 29 30 c.c. of bloody fluid was withdrawn. 25 c.c. of serum was introduced. March 30 the patient developed huge urticarial wheals all over the body associated with enlarged glands in the neck and slight stiffness of the wrists. Dr. Edwin H. Place reported, "It seems to me therapeutically desirable to give intravenous serum as well as intraspinous, and I feel sure that no anaphylactic harm could result at this time." 15 c.c. of serum was given intravenously after a gradual intravenous desensitization. The only ill effect was the appearance of angioneurotic edema of the face. March 31 the neck was almost normal, the condition otherwise good. A lumbar puncture was done, and 20 c.c. of serum given intraspinously. 15 c.c. was given daily intravenously for three days and once intraspinously April 1 and 3. Decreasing amounts were then given. April 1 X-ray showed no definite abnormality of the sinuses, the pineal gland or the sella turcica. April 7 everything was normal except for slight Oppenheim and Gordon on the right. April 15 no reflex changes were present. The patient was up and about feeling well. April 18 he was discharged.

FURTHER DISCUSSION

You see how rapidly the fluid reaccumulated.

Certainly up to March 27 that is good therapeutics. That is the way the meningitis patient responds if he does respond to serum.

He had angioneurotic edema, so he really was not desensitized, or only partially.

What shall we expect of the patient after discharge? You will find very little about it in the text books. I saw a large number of these cases during the war. Meningitis was one of the camp fevers. Every army has cases like this. Most of them had pain and stiffness in the back for months afterwards and were subject to headaches. But if they get as far as this patient has, you could say that ultimately they will have no serious after effects of any kind. I believe from the way this treatment sheet reads that they saved his life. I do not believe the man would have got well without that treatment.

I will speak briefly on the experience which made me believe in antimeningococcic serum. We had a big epidemic in our hospital in France. We gave serum in every case, and our mortality rate was 20 per cent; 80 per cent got well. We ran out of serum. We got another serum, said to be just as good. We gave it in the same way, in the same wards, under the same conditions. 80 per cent died. It was a terrible thing to watch. We were getting no effect. That is the mortality of this type of meningitis untreated. Then we detached a man and sent him all over France to try to obtain some of the old serum. In a week he came back with some. We used it and had the same

mortality as before, 20 per cent. This gave us confidence in this kind of serum if you get the real stuff. We tried with, without and again with, and got the results I have told.

DR. TRACY B. MALLORY: The diagnosis of this case of course was confirmed beyond reasonable doubt by the therapeutic results of the serum treatment, but it was proved bacteriologically also, not from the spinal fluid, which never showed the organism, but by a blood culture. That is, I think, a very important feature of the case. It is often forgotten that meningococcus infection may exist for weeks or even months as a septicemia, occasionally terminating either in recovery or death without development of meningitis, but more frequently showing a terminal meningitis.

A rash similar to the one this patient showed is a usual finding in such cases. In the more fulminating cases, especially during epidemics, a purpuric type of rash is found as a rule. In the oldest text books epidemic meningitis is often described as spotted fever. I think the experience of the present day is that rash is rarely seen in the disease. I have seen only one other case with a rash absolutely identical with this. In that case the man ran a septicemia of seven weeks' duration. Blood cultures were repeatedly negative. Finally a Gram-negative diplococcus was discovered. There was a questionable history of gonorrhea and a heart murmur. It was assumed clinically that it was gonococcus endocarditis. In the bacteriologic laboratory repeated efforts were made to identify the organism itself. One characteristic of the meningococcus is that it agglutinates with great ease in almost any serum, and this organism agglutinated in equally high dilutions of gonococcus serum, meningococcus serum, and normal horse serum. Efforts were then made to identify it by sugar fermentation, but the organism would not grow in any fluid medium, so several more days were wasted. Finally by mixing the sugars with agar and putting indicators in the plates, as in an Endo plate for typhoid bacillus isolation, we were able to get characteristic fermentation. But on the day on which the organism was identified the man developed meningitis and died in spite of intravenous and intraspinous therapy.

I think there is no question that this boy had septicemia, probably through the whole period of two or three weeks of vague illness before his meningeal symptoms developed and also during and subsequent to these symptoms. It should be remembered in treating these cases that they must be considered as potential septicemias as well as meningitides. I see no harm and much to gain in treating every case intravenously as well as intraspinously.

A STUDENT: Between March 28 and March 29 the spinal fluid became cloudy once more.

DR. ELBERT L. PERSONS:* Yes, and this was associated with a recurrence of the previous rash, vomiting, a chill followed by a temperature rise, and a meningococcus septicemia,—in other words a real relapse, due probably to insufficient treatment. He did not have intravenous treatment during the first episode because he had no fever, a negative blood culture and the diagnosis was only presumptive, and because he responded so well to serum given intraspinously. There was apparently a focus somewhere which had not been reached and which was responsible for the second episode, or relapse. (Sinus X-rays taken with this in mind showed no evidence of infection.)

Our feeling that the rash which ushered in the relapse was not serum disease was confirmed two days later by the development of an entirely different urticarial rash and other unmistakable evidence of serum sickness. At this time the blood culture report was received, which made intravenous serum therapy imperative, so he was desensitized and treated. After he was clinically well he continued to receive small doses of serum subcutaneously to guard against his becoming resensitized before the possibility of a second relapse grew remote.

Thirteen of these cases of chronic meningococcus septicemia have recently been collected,[1] and a reference is appended to another article not mentioned in that series.[2]

DIAGNOSIS

Chronic meningococcus septicemia.
Chronic meningococcus meningitis.

REFERENCES

1 Graves, W. R., Dalaney, A. D. and Michelson, I. D.: Chronic Meningococcemia. J. A. M. A., 1929, 92, 1923.
2 Vlets, H. R.: Meningococcus Meningitis. Med. Clin. No. Amer., 1925, 8, 1841.

*Recently senior interne on the East Medical service.

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AN EPOCH IN THE HISTORY OF MEDICINE

THE opening of the Osler Library at McGill University on the 29th of May, as reported in the NEW ENGLAND JOURNAL OF MEDICINE of June 13th, and the publication of the catalogue of the library* mark a distinct epoch in the history of medicine in this country and throughout the world. The library itself is unique and the catalogue one of the finest ever issued. The editors, Dr. W. W. Francis, the present librarian of the Osler Library, Mr. R. H. Hill of the Bodleian Library, Oxford, and Dr. Archibald Malloch, librarian of the New York Academy of Medicine, have done their work thoroughly; these three devoted pupils of Sir William Osler (two of them actual relations of his) have spent the greater part of the last ten years in cataloguing the 7,600 odd volumes and the results of their labors comprise a book of nearly 800 pages. It is hardly fair to say, perhaps, that the book is really the results of their labors, for a large part of it had been already accomplished by Osler himself, who knew all his important books thoroughly and even wrote, as the catalogue well shows, a descriptive note of many of the books and an estimation of their place in medicine.

The library is unusual because it consists of literature illustrating the history of medicine and science, collected with a definite educational purpose; no other collection of medical books has had such a distinctive aim. Osler, as he states in the introduction, began to be interested in books when he was a very young man, at Trinity College, Toronto, in 1867. He entered the Toronto School of Medicine in the latter year and during the next few years he was able to put a few books, but not many, onto the shelves of his permanent library. The first book he bought was the Globe Shakespeare and the second a copy of the 'Religio Medici' of Sir Thomas Browne, an American edition of 1862. The Shakespeare was stolen, but the Browne, which he bought in 1867, was the father of his Browne collection. In 1919, just before his death, Osler wrote, "I doubt if any man can more truly say of this book 'comes viae vitaeque' 6. 12. 19, W. O." He succeeded in collecting all the editions of the 'Religio Medici' and a list of them fills nearly six pages of the catalogue. Many of the references contain notes by Sir William himself. His collection of 'Religio Medici', one of the finest in the world, forms the cornerstone of Osler's *Bibliotheca Litteraria.*

Osler added a few more books to his collection in the seventies, but they were mostly textbooks on medicine. When he left Montreal in 1884, he gave his collection of journals to McGill Medical Library. In Philadelphia, from 1884-89, the atmosphere was somewhat more literary and Osler added many works of American masters of medicine to his library. Baltimore saw the beginning of his definite collection; "I began to buy, (says Osler), first, the early books and pamphlets relating to the profession in America; secondly, the original editions of the great writers in science and in medicine; and thirdly, the works of such general authors as Sir Thos. Browne, Milton, Shelley, Keats, and others. Catalogues—German, French, and English—appeared at the breakfast table, and were always in my bag for railway reading. Summer trips to England and the Continent, often of three months' duration, gave time for reading, and my interest got deeper and deeper in the history of medicine and in the lives of the great men of the profession. The association with Billings and Welch was a stimulus, and the Historical Club of the Johns Hopkins Hospital awakened no little enthusiasm. In the classroom more and more attention was paid to the historical side of questions, and at my Saturday evening meetings, after the difficulties of the week had been discussed, we usually had before us the editions of some classic. Altogether,

*Bibliotheca Osleriana: A Catalogue of Books Illustrating the History of Medicine and Science, Collected, Arranged, and Annotated by Sir William Osler, Bt. and Bequeathed to McGill University. Oxford: The Clarendon Press, 1929, xxxv + 785 pp.

the foundation was laid for a successful avocation, without the addition of which to his vocation no man should be called successful (so President Gilman used to say). Buying freely English and foreign books and subscribing to more than forty journals, I soon had the house overrun, but with special exceptions they were passed on to my friends or to libraries."

In Oxford he began to sort the books, gave away many of the new books, monographs and reprints, and devised a plan for grouping his library into certain divisions, as follows:

I. *Prima,* which gives in chronological order a bio-bibliographical account of the evolution of science, including medicine.

II. *Secunda,* the work of men who have made notable contributions, or whose works have some special interest, but scarcely up to the mark of those in Prima.

III. *Litteraria,* the literary works written by medical men, and books dealing in a general way with doctors and the profession.

IV. *Historica,* with the stories of institutions, &c.

V. *Biographica.*

VI. *Bibliographica.*

VII. *Incunabula, and*

VIII. *Manuscripts.*

The *Bibliotheca Prima* covers the important books in relation to the older civilizations, the periods of the Greeks and the Arabians, the Middle Ages, and then the 16th to the 19th centuries. In the *Prima* one finds Hippocrates, Plato, Aristotle, Theophrastus, Dioscorides and Galen under the Greeks. Under the Arabians are Rhazes, Avicenna and Averroes. The one man that Osler considered fit to represent the Middle Ages was Roger Bacon. In the 16th century, the list, of course, begins to expand rapidly: Leonardo da Vinci, Paracelsus, Copernicus, Gesner, Paré, Agricola and Gilbert. In the 17th century, Francis Bacon, Harvey, Galileo, Descartes, Boyle, Swammerdam, Ray, Malpighi, Sydenham, Leeuwenhoek, Newton and Locke. Under Harvey are given the forerunners of the discovery of the circulation of the blood: Servetus, Columbus, Caesalpinus. The 18th contains Berkeley, Hales, Boerhaave, Linnaeus, Black, Haller, Morgagni, Priestley, Lavoisier, Howard, Spallanzani, Cavendish, Hunter, Galvani, Dalton, Jenner, Malthus; and in the 19th, Bichat, Young, Davy, Laennec, Bright, Faraday, Joule, Adams, a section on Anaesthesia, Bernard, Helmholtz, Pasteur, Darwin, Virchow, Nightingale, Lister, Koch, Laveran, Ehrlich and Röntgen. In the 19th century many names are grouped under the subject of *Anaesthesia.* This section covers over 150 items in the catalogue and followed out Sir William's idea in regard to the development of any important subject in medicine. Under Darwin, he considers Galton, Huxley, Mendel, Spencer, Wallace and Weissmann. Each name is represented by some publication of the man and in most cases the rarest editions are included. There are still, however, as the editors point out, many gaps in the subsections to be filled.

Not everyone, of course, will agree with Osler's idea of who should go into the *Bibliotheca Prima.* Osler was doubtful about some of the names himself. For instance, in regard to Conrad Gesner, he said, when showing this section of his catalogue to a friend, "I am not sure that this fellow should go into the *Prima,* but I love him so much that I must put him there; besides, he is the father of bibliography." No one will disagree, however, with the majority of the names selected. The *Bibliotheca Prima* covers 1702 items, all of which have to do with the great contributors to medical and scientific knowledge from the earliest times to the work of Ehrlich and Röntgen.

The *Bibliotheca Secunda,* which is the largest section, contains medical and scientific works of authors not of the first importance. They are arranged alphabetically under authors. The next division, the *Litteraria,* contains Osler's special collection and reflects his keen interest in the literary avocations and hobbies of physicians and the relations of medicine and science with the world of letters. It contains many medical and philosophical poems, as well as books and pamphlets on longevity, death, immortality, spiritualism and witchcraft. In his library at Oxford the sections containing these latter books were familiarly known as "Death, Heaven, and Hell."

The *Bibliotheca Historica* contains literature on medical institutions, besides historical and retrospective works. Osler's *Incunabula* section contains 106 books printed before 1501, in addition to 30 others which are catalogued in the *Prima.* The *Manuscript* section includes many of Osler's personal writings under a sub-section, *Osleriana.* The catalogue is noteworthy in having a splendid index, covering 80 large pages, which makes the book invaluable as a source of reference to the history of medicine.

The library does not contain a large collection of books which Osler gathered together on the heart, arteries, blood and tuberculosis, and which he left to the Johns Hopkins Hospital in Baltimore, nor does it contain the small but splendid collection of important editions in English literature which has been placed in the Tudor and Stuart Club at Johns Hopkins University, a club founded in memory of Olser's son killed in the War, Edward Revere Osler.

Such a library as Osler collected in his lifetime would be largely useless were it not for the splendid catalogue prepared by Dr. Francis and his coworkers. We are, perhaps, amazed at Osler's industry in collecting so many important

books, but we are even more astounded at the number of careful notes he added to many of the catalogue cards and at the great care with which he selected the books to go in the *Prima* section. The cataloguing of the library leaves nothing to be desired; it has been done with the greatest possible care and faithfulness. With the books beautifully housed in their new quarters at McGill University and with the catalogue at hand, one does not hesitate to say that a new milestone has been reached in the history of medicine.

HAVE WE FORGOTTEN?

A PARTIALLY compensatory by-product of most disasters has been the awakening to previously unrealized dangers and the institution of rigorous methods for their control. The tragedy at the Cleveland Clinic seems to have borne but little fruit. Certainly it is fair to assume that the conditions in such a clinic would be far superior to many institutions caring for the sick. If such a disaster, apparently previously undreamed of, could occur there, what other death traps may be lurking unsuspected? There is probably not a hospital administrator or physician throughout the country who did not run over in his mind the possible hazards in the institution with which he was most closely associated with a view to identifying and eliminating them. However, medical men are not trained architects nor fire prevention experts. They do not recognize hazards that are not obvious.

The writer has seen no satisfactory report on the cause of the Cleveland Clinic disaster. Several editorials and reports have appeared in medical journals and the lay press relative to the danger of inflammable x-ray films and to the immediate cause of the fire.

Those interested in fire prevention know one valuable by-product of the Salem fire—an elaborate study of the burning of the Naumkeag Cotton Mill—a volume which considered from every possible angle the dangers of fire in a textile mill and the means of combatting them. Is it too much to expect that a similar study could be made of the Cleveland Clinic disaster? Perhaps it is too late now, but certainly there is room for a full and comprehensive report with detailed recommendations, considering hazards of all types in hospitals and clinics.

One question, for example—Is it true that the intake of the warm air ventilating system in the Cleveland Clinic was in the corridor immediately in front of the x-ray room door and by this means the gases were disseminated throughout the building? In case of fire in the average hospital what member of the personnel would be familiar with the ventilating system and the need of shutting off at least the blower system to prevent forcing of smoke and gases throughout the building? Would it not be possible to hook this system up with the automatic sprinkler system in such a way that when a sprinkler head let off the forcing of air into all parts of the hospital would cease? Again, how many hospitals recognize the latent dangers in large stocks of ether, of alcohol or of ethylene in the hospital buildings? Perhaps some comprehensive report of the latent dangers in hospitals and clinics is already in existence. If so, it should be called to the wider attention of the medical profession. If it does not exist or is not in the process of preparation evidently the lives lost in the Cleveland Clinic mean less than the dollars lost in the Naumkeag Cotton Mill.

SUMMER CAMPS

EMPHASIZING the sanitation of summer camps in a medical journal may seem quite unnecessary for all well informed physicians know that roadside drinking water and food stands may not be the places for wholesome refreshment. The responsibility for educating the lay camper comes within the domain of preventive medicine and the opportunities for sermons on the hazards of bubbling springs, bad milk and food handlers are many. Unfortunately doctors are reticent and disinclined to preach sanitation so that most of the educational material has been published by health authorities. How much of this advice is read and applied is not known, but the end of the summer vacation period has hitherto brought to the surface evidence of inattention to health propaganda.

The magnitude of the opportunities for publicity may be of interest, for even four years ago there were known to be more than three thousand camps in thirty-five states attended by over two million campers.

In Maine alone the investment in camps is estimated to be in excess of five million dollars.

Fortunately health authorities are giving much attention to the sanitation of camps. In one state in 1926, where 233 camps were conducted, only 104 were found to be in a satisfactory condition.

A National Camp-Safety Code was decided upon at a recent meeting of representatives of 14 national organizations interested in summer camps. It was suggested that the research and secretarial work for the compilation of this "code" could be handled through establishing a graduate fellowship at Teachers College, Columbia University. For this purpose the National Bureau of Casualty and Surety Underwriters has offered a $1,000 fellowship for the coming year, open to candidates for a doctor's degree with comprehensive camping experience.

The moral hazards of certain types of camps where small shacks provide accommodations for unregistered guests have been referred to in the daily papers.

The freedom accorded to young people in the use of swiftly moving motor cars coupled with

the wares of the bootlegger and the secluded small shacks make a combination which may lead to degradation.

Health authorities are trying to meet the sanitary problems, but are parents as solicitous of the other dangers as they should be?

Must the police and the public health authorities co-öperate more intensively under present conditions?

We have faith in the behavior of the great mass of the younger generation, but moral and physical hazards increase with exposure to malign influences.

The family physician may with propriety advise his clientele of all potential evils. He should supplement the work of the teacher of ethics as well as that of the health officer. He has an opportunity for closer contact than either.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Robins, Samuel A. M.D. Tufts, 1914. Director, X-ray Department, Beth Israel Hospital. Roentgenologist, Boston Lying-In Hospital and Evangeline Booth Hospital. Consulting Roentgenologist, Norwood Hospital. Instructor in Roentgenology at Tufts College Medical School. Address: 636 Beacon Street, Boston. Associated with him is:

Goldberg, Bernard I. B.S., M.D. Harvard, 1922. Assistant in Medicine, Beth Israel Hospital. Teaching Assistant in Theory and Practice, Tufts Medical School. Assistant in Medicine, Boston University School of Medicine. Address: 483 Beacon Street, Boston. Their subject is: "Cholecystography." Page 114.

Rose, David. M.D. Tufts, 1926. Junior Assistant Surgeon in Gynecology at Boston Dispensary. Assistant Gynecologist at The Dispensary for Women. Assistant in Gynecology to Out-Patients at Beth Israel Hospital. Clinical Staff of The Jewish Maternity Clinic. His subject is: "Local Anaesthesia in First and Second Stage Labor." Page 117. Address: 483 Beacon Street, Boston.

Painter, Charles F. A.B., M.D. Harvard, 1895. His subject is: "Amos Twitchell 1781-1850." Page 125. Address: 520 Commonwealth Avenue, Boston.

THE BOSTON MEDICAL LIBRARY

CANCER RESEARCH

It is hard to conceive and impossible to measure what the relief in physical suffering, the saving of time through the prolongation of human life and the abolishment of dread and anxiety will amount to on that day when the world learns of the discovery of a real cure for Cancer. It would be almost equally interesting on that same day to know what had been the amount of time, money and human effort put into attempts to find the solution of this problem. Whatever it might be it is pretty certain that all would agree that it had paid. To attempt to chart the course that has been followed since men began seriously to study the disease with a view to ascertaining its cause would of course be impossible in any one article. All are more or less familiar with the chief theories upon which students of the subject have worked. The purpose of this brief review is to present some of the activities of those who in the last thirty years have been engaged in research upon this subject so that it may be possible for all to be intelligently conversant with the status of these investigations at the present moment. To take an arbitrary point from which to start, the year 1900 has been selected and as an example of the manner in which the subject was approached at that time one will be well repaid if he reads the late Dr. J. C. Warren's address of that year before the Maine State Medical Society. A good deal of space was given to a discussion of the distribution of cancer the world over, something we do not often think about in these days. At that time it was regarded as differing strikingly from tuberculosis in not having so wide or general a dissemination. In the far north it was almost unknown and in the tropics, also, it was rare. At this period middle and southern Europe, taking Denmark as a fairly representative locality and one where statistics had been carefully kept over a five year period, there was a mortality from cancer of about 11.9 per 10,000 of the population. This period was completed in 1893. It was rare in Turkey, Greece and other south European states. Japan and northern China were like North America and Northern Europe. South China had very little. It was rare in Asia, Persia and India. Rare in central Africa, according to Livingston; in fact Algeria and Madeira were the only places in Africa where there was much if any cancer. It was common in Great Britain and Ireland, in all parts of the United States and Canada except in the British Northwest and Alaska. In Australia there was a mortality per 10,000 of 5.53. There was a higher percentage of cases in Peru than elsewhere in South America. In tropical countries it is said that Cancer and Malaria are in inverse ratio. In New York state in 1895 there was a mortality of 5.3% per 10,000; in Massachusetts of 6.4%; in California of 7 to 9%. The tendency for Cancer to infest certain localities had been a matter of note and studies upon the nature of the soil, sources and character of the water supply, etc. had been carried out to see if there was any explanation of the incidence of the disease in any of these observations. Numerous "cancer houses" had been described. In a certain town in Normandy, on

a single street where there were 54 houses, 17 of these had had cancer victims as inmates. In some of these houses there had been two cases. At the time this paper of Warren's was written the general opinion was that Cancer had been on the increase in the previous half century and figures bore this out. In England and Wales from 1866 to 1868 deaths from cancer equalled 25,567. From 1894 to 1896 in the same countries there were 67,888 deaths from the same cause. In 20 years the death rate had more than doubled for males and just about doubled for females. The possibility of inoculating cancer in men and animals was being recognized and backed up by experimentation. Hereditary influences were noted in percentages varying from 10-30% and D'Arcy Power reported a remarkable family tree in which nearly every member of a certain family, through four or five generations, had died of cancer. Parasites and protozoans had been found in cancer and the theories of Tiersch and Cohnheim were being keenly discussed. The former argued that there was an antagonism between epithelial cells and the surrounding connective tissues which resulted in the overpowering of the latter by the former. Cohnheim propounded the theory of the dormant state of embryonal cells which were in some manner stimulated to grow at an embryonic rate. The protozoan theory of cancer causation received some support from analogy with certain skin diseases having such an etiology. Warren's conclusion of the whole matter to that date was that none of the theories advanced had as yet been proven. Considerable work was being done at this period upon the chemistry of tumors but nothing conclusive or even suggestive had been derived. Certain investigators have noted chemical substances in the blood of cancer patients capable of inciting amoeboid movements in leucocytes. It is believed that chromatin is a substance having this property of stimulating amoeboid movements. From a study of these and associated phenomena it is believed by these observers that the cancer problem is a cytological one. Still other students of the question who incline to the parasitic theory regard it as likely that some unknown parasitic organism gains entrance into the cancer cell and that eventually the cancer cell itself is the parasite. The French Cancer Commission has busied itself in an investigation of complement fixation studies. It has been shown that cancer cells will live indefinitely if transplanted to a suitable environment, in other words, can maintain an independent existence. Experiments made in consequence of the apparent occasional spontaneous disappearance of human cancer have proven that an experimental immunity to cancer may be developed in animals.

Ewing points out that up to 1900, when research got its first hearing in attempts to solve the cancer problem, it has shown among other things that it is a universal biological problem and that its results hold good for all time and for all orders of living animals and probably for plants. Though the first recorded attempt at transference of cancer was accomplished by Peyrilhe in 1780 it was not until Hanau in 1899 reported his successful attempts and a little later Noreau in France, Loeb in this country and Jensen in Denmark, in 1901 and 1902, that serious consideration was directed to studies of this sort. It was shown in experimental cancer that changes in diet apparently affected the growth of cancer cells—in fact may inhibit it altogether. Studies on the regression of cancer growths and immunity to transplantation in animals in whom spontaneous disappearance had taken place are all of extreme significance to an understanding of this problem. Ewing stated that every essential feature of cancer in man was exhibited in this disease in the rat.

Sandwith reviews the subject of cancer from a historical standpoint showing its recognition in Egypt at least 1500 B. C. and in India 500 years earlier. In 1920 Loeb concluded that anything which in either a chemical or physical way increased cellular activity might act as a cause for cancer. He is inclined to support the belief in an hereditary human influence for the development of cancer, just as it seems to have been shown experimentally in rats, that in them heredity plays a rôle.

Paine, reading before the British Medical Association in 1920 regards it as a state of disordered growth, not the result of parasitic invasion but rather induced by absorption from bacterial foci, but effecting its results through disorganizing cellular metabolism. Sir Charles Ballance in 1928 in a discussion of Gye's theory of the origin of Cancer was not over optimistic as to the soundness of his conclusions. It would therefore appear that it remains for some one to discover the link in the chain of possible contributory factors which cover metabolism, in its various chemical and physical relations, biology, in its cytological manifestations in many fields and heredity, possibly, as furnishing a background of some significance.

To put out the entire literature of the subject would be obviously impossible. To select a few of the significant contributions may enable the reader who wishes to brush up on the trends of the recent investigation to profit by a few points of observation. During the fortnight beginning July 22 a selected list of such articles may be found in Holmes Hall.

MISCELLANY

ESSEX COUNTY HEALTH ASSOCIATION

The Essex County Health Camp which is conducted by the Essex County Health Association under the leadership of Miss Cora L. Cooke opened its camp at Middleton with an enrollment of eighty children; 41 girls and 39 boys.

During the entire camp season of eight weeks, the

health of the children is under the supervision of Dr. Olin S. Pettingill, President of the Association. Each child not only receives a physical examination at camp but in addition is given an x-ray examination of the chest and the von Pirquet skin test for tuberculosis.

The new office, infirmary, and bungalow are proving a welcome addition to the camp, but the directors are especially anxious to secure approximately $2000 for a new swimming pool and are looking to the public for this assistance.

This year the directors have been most fortunate in securing an able staff of workers including Miss Rae Kaufer who is directing the program and planning the activities of the counsellors; Miss Angeline Chase of Danvers who has charge of the dining room; Miss Ruth Kelly of Danvers who is caring for the younger children and teaching them songs and games; Miss Ruth Maynard of Somerville teaches woodcraft; Miss Lillian Yaeger of Brookline instructs them in sports and plays the piano for dancing; Miss Florence Driscoll of Peabody has charge of the dancing and assists Miss Kaufer in posture work; Miss Marion Hilton of Danvers is camp librarian; and Miss Lillian Aylward of Peabody teaches camp craft. The Junior Counsellors are: Mr. Manley Davis of Peabody, Mr. Howard Paulson of North Andover; Miss Rosalie Derocher of Beverly, and Miss Hazel Philbrick of Middleton.

The smaller children have the pleasure of playing in new sand boxes this year while the older girls and boys have a new archery set at which the children are anticipating some very keen competitive games during the summer months.

NOTES FROM THE ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION

ELECTION OF OFFICERS

The following officers have been elected for 1929-1930:

President-Elect—William Gerry Morgan, Washington, D. C.

Vice President—Ernst A. Sommer, Portland, Ore.

Secretary—Olin West, Chicago, Ill.

Treasurer—Austin A. Hayden, Chicago, Ill.

Speaker of the House of Delegates—Frederick C. Warnshuis, Grand Rapids, Mich.

Vice Speaker of the House of Delegates—Albert E. Bulson, Fort Wayne, Ind.

Board of Trustees—Term expires 1934:
D. Chester Brown, Danbury, Conn.
Allen H. Bunce, Atlanta, Ga.

Judicial Council—James B. Herrick, Chicago, Ill.

Council on Medical Education and Hospitals—M. W. Ireland, Washington, D. C., and James S. McLester, Birmingham, Ala.

Council on Scientific Assembly—L. H. McKinney, Colorado Springs, Colo.

WILLIAM GERRY MORGAN

William Gerry Morgan, well known as a leading internist of Washington, D. C., was born in Newport, N. H., May 2, 1868. After receiving his early education in Webster Academy and his bachelor of arts degree in Dartmouth College, he entered the University of Pennsylvania and received the degree of doctor of medicine. He has been professor of gastroenterology in Georgetown University and is on the consulting staff of the Garfield Memorial Hospital. He is a member of the Medical Society of the District of Columbia, of the American Therapeutic Society and of the Southern Medical Association. He has been a member of the U. S. Naval Reserve Corps from its organization to reorganization. He has written extensively in the field of internal medicine. He has been president of the American Gastro-Enterological Association, president of the American Congress on Internal Medicine, and is now councilor of the Southern Medical Association and a governor of the American College of Physicians. He has been president of the Medical Society of the District of Columbia, financier for its home, and its delegate to the American Medical Association.

THE NEXT ANNUAL SESSION

The House of Delegates voted to hold the Eighty-First Annual Session of the American Medical Association at Detroit, Michigan.

REGISTRATION

Total for the four days, 3038.

FROM THE REPORT OF THE COMMITTEE ON AWARDS

In the above-mentioned report the following appears under Class II:

The Gold Medal to Philemon E. Truesdale for experimental demonstration of the mechanism of transposition of abdominal viscera following rupture of the diaphragm.

—Excerpts from the A. M. A. Daily Bulletin.

NORTH SHORE BABIES' HOSPITAL

With a total of thirty-two children on the road to health, the North Shore Babies' Hospital is continuing to reduce the infant mortality in the North Shore district and to increase happiness throughout this area. From the monthly report of Miss Dorothy Smith, R. N. Superintendent of the Hospital, children from the following towns were cared for during June: Beverly, Danvers, Essex, Gloucester, Haverhill, Ipswich, Lowell, Lynn, Marblehead, and Salem. The average daily census in June was 27.2 and twenty children were nursed back to health and sent smiling to their respective homes.

During this same month donations were gratefully received from Essex County Agricultural School, the Clara Barton Circle of the Dane Street Church, Second Church Sunday School, Women's Association of the Beverly Baptist Church, and the Wesley Church.

June also marked the twenty-fifth anniversary of the founding of the North Shore Babies' Hospital which is now firmly established, a philanthropic organization meriting the public's generous support. The endowments of the hospital are small and the fees from parents amount to only one-sixth of the expenses, however the directors of the hospital have never refused to accept a sick baby because of the parent's inability to pay.

CORRESPONDENCE

AN ANSWER TO ENQUIRIES CONCERNING MINERAL OIL AND KIDNEY COMPLICATIONS

July 9, 1929.

To the Editor of the NEW ENGLAND JOURNAL OF MEDICINE.

Dear Doctor:

Since you were good enough to publish my article

on "Impetigo Neonatorum" in your number of November 15, 1928, and a reprint of the same under your department of Gynecology and Obstetrics at a later date, I have had many communications relative to two points in the technique.

I have been asked whether mineral oil could not be better used than sterile cottonseed oil in the inunction of the babies subsequent to their mercurial treatment. I understand that recently a large maternity hospital has tried the experiment. At the Robinson Memorial Hospital we tried, in the second year of our studies, the mineral oil as suggested, and felt confident that we saw definite inflammatory processes in the skin occur from its use. We dropped its application, went back to the sterile cottonseed oil, and had no more trouble.

The other question concerned the possibility of causing kidney complications through the use of mercurial ointment at birth. We studied carefully about one hundred cases as to the presence of albuminuria and casts, and with the exception of one case of sepsis, in a septic broncho-pneumonia, we found no evidence of nephritis. We have been looking for the infant who is idosyncratic sufficiently to have such a difficulty, but we have not yet seen that infant.

Our own use of this technique is four years old at the present time, and we have practically a one hundred per cent. freedom from impetigo over that period of time.

Thanking you for your courtesy, and trusting that this statement many answer the several inquiries I have recently received, I am

Yours very truly,

O. R. CHADWELL.

NOTICES

CHANGES IN DUTIES OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE IN NEW ENGLAND

JULY 3, 1929

Surgeon L. R. Thompson. Directed to proceed from Washington, D. C. to Boston, Mass. on June 26, stopping if necessary on return to station at New Haven, Conn. in connection with field investigations of industrial hygiene and sanitation. June 25, 1929.

Assistant Surgeon G. R. Welch. Relieved from duty at Quarantine Station, Gallops Island, Boston, Mass. and assigned to duty at the Bureau, Washington, D. C. on or about July 1, 1929. June 28, 1929.

P. A. Surgeon E. R. Coffey. Directed to proceed from Jefferson City, Mo. to Boston, Mass. and to such other places in Massachusetts as may be necessary, and return, in connection with mosquito control. June 28, 1929.

Assistant Surgeon (R) J. W. Bryan. Relieved from duty at Marine Hospital, New Orleans, La. on or after July 1, and assigned to duty at Marine Hospital, Boston, Mass. June 28, 1929.

ANNOUNCEMENT OF THE CLINICAL CONGRESS AND THE EIGHTH ANNUAL MEETING OF THE AMERICAN COLLEGE OF PHYSICAL THERAPY, NOVEMBER 4, 5, 6, AND 7, 1929, HOTEL SHERMAN, CHICAGO

Chicago has again been selected as the annual meeting place for the clinical congress of physical therapy of the American College of Physical Therapy. The consensus of opinion of the many representatives who have attended the sessions in the past few years, is that Chicago offers the most attractive features for a large medical gathering. Convention facilities are unsurpassed. Chicago as a medical center needs no apology. The experience of those who have attended any of the previous conventions speaks well for a highly successful 1929 Clinical Congress.

One of the novel features to be inaugurated this year is the clinical part of the program. One half of each day will be devoted to a variety of clinics in the sections on Medicine, Surgery and allied specialties, and Eye, Ear, Nose and Throat. As in the past, there will also be a joint meeting of all sections for the presentation of numerous addresses of interest to all physicians irrespective of their specialties. Education in physical therapy will be thoroughly stressed, as the time has come when this phase of the subject must be given due emphasis by an organization such as the American College of Physical Therapy. Scientific papers, clinical addresses, demonstrations of technique, and scientific and technical exhibits, will comprise the remainder of a scientific program which merits the attention of all those interested in the newer fields of medicine. Attendance at the congress is not limited to the fellows of the College, as all duly licensed physicians, their technicians and assistants, properly sponsored, are cordially invited to attend all the sessions.

Program and other information may be obtained by writing to the Executive Offices, American College of Physical Therapy, Suite 716, 30 N. Michigan Avenue, Chicago, Illinois.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examination:

Physiotherapy Aide

Applications for physiotherapy aide must be on file with the United States Civil Service Commission at Washington, D. C., not later than September 10.

The examination is to fill vacancies in the hospitals of the Veterans' Bureau and the Public Health Service throughout the country.

Occupational Therapy Aide (Arts and Crafts)

Applications for occupational therapy aide (arts and crafts) must be on file with the United States Civil Service Commission at Washington, D. C., not later than December 30.

The examination is to fill vacancies in hospitals of the Veterans' Bureau throughout the country.

Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

NOTICE OF MEETING

THE RADIOLOGICAL SOCIETY OF NORTH AMERICA

The next meeting of the Radiological Society of North America will be held at Toronto, December 2 to 6, inclusive. Headquarters at the Royal York Ho-

tel. The facilities and accommodations at this hotel are the best in the history of the Society and we expect to have a banner meeting in every way. The Scientific Program, Clinics, Scientific and Commercial Exhibits will be of the highest character and exceedingly interesting and instructive. The program will be interesting not only to the Radiologists but to the Physicians practicing other medical specialties and general practice as well. A cordial invitaton is extended to all physicians as well as radiologists to attend the Toronto Meeting. Secure reservations at once through Dr. W. C. Kruger or Dr. G. R. Reid, 20 College Street, Toronto, Canada. Excellent arrangements have been made to take care of the visiting ladies.

SOCIETY MEETINGS

September 27-28—New England Surgical Society. Detailed notice appears on page 1227, issue of June 6.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 468, issue of February 28.

November 4, 5, 6 and 7, 1929—Clinical Congress and Eighth Annual Meeting of the American College of Physical Therapy. See page 149 for details.

December 2-6—The Radiological Society of North America. Complete notice appears on page 149.

DISTRICT MEDICAL SOCIETY

Norfolk District Medical Society

Schedule of meetings for the year 1929-1930. Invitations have been sent to the speakers and the list is true only on condition of their acceptance.

October 29—Medfield State Hospital, Harding, Massachusetts. Papers by the Staff.

November 25—Roxbury Masonic Temple. Dr. Roger Graves, "Urology from the Standpoint of the General Practitioner." Surgical discussion. Medical discussion.

January 27, 1930—Roxbury Masonic Temple. "Recent Advances in Diagnosis and Treatment of Syphilis." Speaker to be announced.

February 24, 1930—Roxbury Masonic Temple, 8:00. Dr. Edwin H. Place has been invited to read a paper and has been given carte blanche in the selection of his subject.

March 24, 1930—Roxbury Masonic Temple. Dr. Burton E. Hamilton. Subject to be announced.

May 6, 1930—Annual Meeting. Program to be announced.

The Censors meet for the examination of candidates, November 7, 1929, and May 1, 1930, in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, at 4:00 P. M.

Applications must be in the hands of the Secretary at least one week previous to date of examination.

Owing to inability to engage the Roxbury Masonic apartments on the last Tuesday of the month, such meetings as will be held in the Roxbury Temple will be held Monday evenings as per the dates above.

FRANK S. CRUICKSHANK,
Secretary, Norfolk District Medical Society.

BOOK REVIEW

The Medical Department of the United States Army in the World War. Volume VI, Sanitation. In the United States, by Col. Weston P. Chamberlain, M. C. In The American Expeditionary Forces, by Lieut. Col. Frank W. Weed, M. C. Washington, Government Printing Office. 1926.

This, the sixth volume of the World War Series, on sanitation of the Army in the United States, and in the American Epeditionary Forces, is one of the most interesting volumes of the series.

Military sanitation and hygiene must be sharply distinguished from those branches of medicine as practised in civil life. This point is well brought out in the introduction to the present volume.

"Conditions incident to the march, the camp, the trench, the crowded transport and the battle field, bring in other problems difficult of solution and practically unknown in civil life."

"Furthermore, sanitary considerations of undoubted importance may have to be neglected because of military necessity, since war is waged to attain a decision of arms, and not with high ideals of sanitation as its primary object."

Comparisons are odious, but at the same time it is impossible not to think of the great changes for the better in this regard, in the thirty-one years, since this country went through the short war with Spain. With what pleasure and pride may the layman and physician alike, read of the achievements of the Army Medical Corps in 1917-1918.

It is only possible in a short review to pick out some of the especially interesting points from this vast store house of information on modern military sanitation and hygiene. In the section dealing with the Army in the United States, the chapters on the choosing of camp sites (in which the Medical Corps was not always consulted), the problem of malaria control in the southern camps, and the very full account of the problems incident to vermin infestation, are among the most outstanding. In connection with the last problem, there is a complete account of the biology of the louse, the noxious "grey back" of the Civil War whose power for infinite harm is so much better understood than formerly.

Many excellent pictures of barracks, rolling field kitchens, field bakeries, incinerators and varied types of latrines, make the chapters devoted to overseas work more graphic. Equipment and clothing of the overseas forces is described by text and illustration; the burden of heavy marching equipment in its relation to the efficacy of the soldier proved a very great and serious problem.

A soldier on the march, we are told, should not carry a burden much greater than a third of his weight, this would average about fifty pounds. It was found that some men were carrying a weight of 63 pounds of equipment, and in the winter months, it is pointed out, a soldier would go into battle carrying a weight of 80 or 90 pounds.

It was inevitable that much of the heavier part of the equipment was thrown away on the march and "salvage squads" became a necessity.

In thinking of the achievements of the Medical Corps of the Army, at home and abroad, as exemplified in this volume, the thought comes that increased medical knowledge could not be wholly responsible, but that a wider understanding of the vital importance of the medical arm of the service, by the commanding officers of the different units, great and small, was also a large factor in the great accomplishment. In closing, let us go back to the Spanish-American War for a moment—31 years ago.

Ashburn, in his "History of the Medical Department of our Army", tells us that, "The surgeon in chief at Chickamauga, under a threat of court-martial, compelled a surgeon to retract his statement that typhoid fever was epidemic, though in point of fact it was epidemic." 1898 and 1918! The changes from such ostrich like behavior in the face of danger, to the efficient and fearless facing of medical facts that must be faced, which is so continually evident in all that pertains to the management of epidemics, unavoidable in themselves, goes far to show why our troops were able to do what they did in the World War.

What a picture to contemplate would have been the plight of our Army at home and abroad, at war, without the efficient Medical Corps, which carried on so successfully ten years ago.